July 24, 2002

Information Technology

Global Command and Control System Readiness Assessment System Output Tool
(D-2002-133)

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Acronyms

CJCS	Chairman of the Joint Chiefs of Staff
DISA	Defense Information Systems Agency
GCCS	Global Command and Control System
JRAMS	Joint Readiness Automated Management System
RAS	Readiness Assessment System
GSORTS	Global Status of Resources and Training System

INSPECTOR GENERAL
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July 24, 2002

MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR PERSONNEL AND READINESS
DIRECTOR, JOINT STAFF
DIRECTOR, DEFENSE INFORMATION SYSTEMS AGENCY

SUBJECT: Report on the Global Command and Control System Readiness Assessment System Output Tool (Report No. D-2002-133)

We are providing this report for review and comment. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. The Joint Staff and the Defense Information Systems Agency were responsive. As a result of management comments, we added Recommendation 1. to the Under Secretary of Defense for Personnel and Readiness, and we revised recommendations 2.a., to the Joint Staff, 3.a., and 3.c. to the Defense Information Systems Agency. Therefore, we request comments from the Under Secretary on Recommendation 1., and from the Joint Staff and the Defense Information Systems Agency on revised Recommendations 2.a. and 3.a. by September 24, 2002.

If possible, please provide management comments in electronic format (Adobe Acrobat file only). Send electronic transmission to the e-mail address cited in the last paragraph of this memorandum. Copies of the management comments must contain the actual signature of the authorizing official. We cannot accept the /Signed/ symbol in place of the actual signature.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Ms. Evelyn R. Klemstine at (703) 604-9172 (DSN 664-9172) (eklemstine@dodig.osd.mil) or Mr. Hugh G. Cherry at (703) 604-9614 (DSN 664-9614) (hgcherry@dodig.osd.mil). See Appendix D for the report distribution. The audit members are listed on the inside back cover of this report.

David K. Steensma

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Acting Assistant Inspector General
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Office of the Inspector General of the Department of Defense

Report No. D-2002-133 **July 24, 2002**
(Project No. D2001LG-0101.01)

Global Command and Control System Readiness Assessment System Output Tool

Executive Summary

Who Should Read This Report and Why? This report should be read by the Global Command and Control System (GCCS) requirements developers, program implementers, functional proponents, and readiness users who rely on them. The report discusses the development and fielding of a GCCS candidate solution for the readiness functional area.

Background. This is the second in a series of reports the Inspector General of the Department of Defense is issuing on the policies and procedures that govern the GCCS. The GCCS is the DoD joint command and control system designed to provide the military leadership with tools to plan and execute worldwide joint military operations. The Readiness Assessment System Output Tool is a GCCS application designed to fulfill both Service and combatant command readiness assessment requirements at the tactical, operational, and strategic levels.

Results. The Joint Staff and the Defense Information Systems Agency did not ensure that development of the Readiness Assessment System Output Tool would address user needs. Fielding dates for the Readiness Assessment System Output Tool slipped at least 5 years, and the potential users were not involved for extended periods. In addition, decisions on application selection were not fully documented. Readiness users and the systems developers would benefit from increased user involvement in requirement validations and testing processes as well as more effective documentation of cost, feasibility analyses, goals, and decisions. The program would benefit with development of concrete and quantifiable performance standards that can be accurately tested as well as a formal report on how the Readiness Assessment System Output Tool requirements meet performance standards. We also reviewed the management control program as it relates to the development and fielding of GCCS applications. See the Finding section for details on the audit results and recommendations.

Management Comments and Audit Response. The Director, Joint Staff, the Director, Defense Information Systems Agency, and the Deputy Assistant Secretary of Defense (Programs), Office of the Assistant Secretary of Defense, Command, Control, Communications, and Intelligence each stated that planned or completed actions sufficiently addressed the recommendations. After review of feedback from the user community and validation of requirements, the Readiness Assessment System Executive Steering Committee directed the Defense Information Systems Agency to reengineer the Readiness Assessment System Output Tool. The Defense Information Systems Agency installed pre-release, functioning versions of the Readiness Assessment Systems Output Tool for users to evaluate in the Joint Staff, four Service headquarters, two Service-Component headquarters, and two combatant command headquarters. The Joint Staff required user representatives to participate in functional user and operational testing.

The users were encouraged to submit the evaluations at any time during the review period. The Joint Staff plans to establish an additional user review panel that will evaluate the requirements not incorporated into the Readiness Assessment System Output Tool schedule. See the discussion of comments in the recommendations section and Appendix C. We consider the comments received to be responsive. As a result of comments from the Joint Staff, we added a recommendation for the Under Secretary of Defense for Personnel and Readiness to publish findings from research on readiness issues for the Defense Readiness Reporting System. Further, we revised the recommendations for the Joint Staff and the Defense Information Systems Agency to recognize progress made and encourage future user involvement. We request the Under Secretary of Defense for Personnel and Readiness the Joint Staff and the Defense Information Systems Agency provide comments on the final report by September 24, 2002.

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Background

Global Command and Control System. The Global Command and Control System (GCCS) is the DoD joint command and control system designed to provide the leadership from the National Command Authority[1] through the battlefield commanders with tools to plan and execute worldwide joint military operations. GCCS consists of interoperable hardware, software, common procedures, standards, and interfaces that comprise an "operational architecture." GCCS incorporates force planning, readiness assessment, and situational awareness[2] applications that battlefield commanders require to effectively plan and execute joint military operations.

Global Command and Control Management Structure. Stakeholders within the Global Command and Control management structure participate in GCCS requirements validation, system development, and system implementation.

Requirements Validation. The Global Command and Control Review Board, the Joint Staff, GCCS users, and working groups participate in requirements validation.

Joint Staff. The Joint Staff, as the project sponsor for all GCCS applications, represents the needs of the users. Through the requirements validation and approval process, the Joint Staff identifies and prioritizes functional requirements GCCS must satisfy.

Global Command and Control Review Board. Representatives from each of the Joint Staff directorates, Services, combatant commands, and GCCS working groups make up the Global Command and Control Review Board. The Global Command and Control Review Board is responsible for (1) identifying, reviewing, and validating requirements added to GCCS; (2) approving and prioritizing requirements; (3) selecting the best candidate application for integration into GCCS; and (4) approving policies and procedures that support joint command and control requirements.

User Community. GCCS users within the combatant commands, Services, Defense agencies, or the Joint Staff may identify and introduce any GCCS functional requirements. The functional users participate in defining requirements throughout the evaluation, development, and fielding of applications.

GCCS Working Groups. Working groups meet regularly and allow operational users to participate in developing and refining input for GCCS strategies, objectives, requirements, and priorities. GCCS working groups

[1]The National Command Authority is the President or the Secretary of Defense or their duly deputized alternates or successors.

[2]Situational awareness is knowledge of friendly and adversary capabilities and intentions along with other relevant information that enables commanders to exercise effective command and control.

review new requirements, validate assigned priorities, evaluate the extent to which existing applications meet new requirements, and recommend new requirements to the Global Command and Control Review Board.

System Development and Implementation. The Assistant Secretary of Defense (Command, Control, Communications, and Intelligence) (Assistant Secretary), Defense Information Systems Agency (DISA), and Integrated Process Teams have key roles in GCCS system development and implementation.

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence). The Assistant Secretary provides functional and acquisition control over GCCS through review and approval of the acquisition strategy, implementation plans, and program baseline goals.

Defense Information Systems Agency. As the centralized program manager for GCCS, DISA directs design, development, acquisition, integration, testing, fielding, and life-cycle support of GCCS applications. The program manager is also responsible for developing metrics to measure program progress and effectiveness.

Integrated Process Teams. System development and implementation concept for the GCCS rely heavily on representatives from functional disciplines that work together in Integrated Process Teams to build a successful program and enable decision makers to make timely decisions that will facilitate the acquisition process.

Readiness Assessment System. In 1996, the Defense Advanced Research Projects Agency was developing the Readiness Assessment System (RAS) as an Advanced Concept Technology Demonstration.[3] DISA and the Joint Staff elected to add RAS to GCCS. The addition of the RAS to GCCS would provide a comprehensive readiness reporting system and offer a more accurate and timely capability to measure joint readiness, warfighting deficiencies, and risk for executing wartime missions. Improving asset visibility and integrating leading readiness indicators are additional goals of the RAS.

The RAS was originally intended to merge four independent applications into a homogenous system. The four applications were the Automated Joint Monthly Readiness Review, the Joint Exercise Management Program III, the RAS Input Tool, and the RAS Output Tool.[4] However, the Automated Joint Monthly Readiness Review has since been eliminated, and the Joint Exercise Management Program III was replaced. The Marine Corps is scheduled to

[3]Advanced Concept Technology Demonstrations are intended to assess the military utility of a new capability and to conduct an assessment at a scale adequate enough to clearly establish operational utility and system integrity.

[4]The RAS Input Tool and the RAS Output Tool were originally referred to as the Global Status of Resources and Training System (GSORTS) Enhanced Input Tool and the GSORTS Enhanced Output Tool, respectively.

receive the RAS Input Tool during FY 2002, and the Air Force is scheduled to receive the RAS Input Tool during the third quarter of FY 2003. See Appendix B for a detailed description of the Automated Joint Monthly Readiness Review, the Joint Exercise Management Program III, and the RAS Input Tool.

RAS Output Tool. The RAS Output Tool was designed to fulfill both Service and combatant command readiness assessment requirements at the tactical, operational, and strategic levels. As a part of GCCS, the RAS Output Tool is intended to provide near real-time access to, and analysis of, readiness data stored in the GSORTS database,[5] Time-Phased Force and Deployment Data[6] stored in the Joint Operation Planning and Execution System[7] database, and 5 years of readiness data. By employing the RAS Output Tool, the Services want more versatility and efficiency for reviewing the readiness of forces and acquiring insight into joint- and national-level readiness assessments. The application is also intended to allow the combatant commands to assess the readiness of forces across Service lines and provide readiness assessment capabilities required to plan for and facilitate timely resource allocation and force commitment recommendations to the National Command Authorities. DISA planned to field an initial version of the RAS Output Tool, followed by four Service-unique versions of the application.

RAS Development. On January 11, 1999, DISA awarded a contract (DCA100-99-C-4019) to A.B. Floyd Enterprises, Incorporated, Alexandria, Virginia, for readiness application support, maintenance, and enhancement. DISA uses the contract to procure RAS Output Tool development efforts.

Objectives

This is the second in a series of reports that the Inspector General of the Department of Defense is issuing on the policies and procedures that govern the GCCS. The overall audit objective was to evaluate the joint functionality, system integration, and operations of GCCS. The specific objective for this segment of the audit was to assess management and oversight of the RAS Output Tool. See Appendix A for a discussion of the audit scope, methodology, management control program, and prior coverage.

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[5]The GSORTS database is a read-only look into the Status of Resources and Training System database. Military units, some DoD organizations, and certain foreign and international organizations involved in operations with DoD regularly enter data on the status of unit personnel, training, equipment on hand, and equipment serviceability.

[6]Planners use Time-Phased Force and Deployment Data (such as estimates of logistics support requirements and designated ports for loading and offloading) to identify types of forces and actual units required to support an operation plan and establish the sequence for moving forces and their support (time phasing) into an area of operations.

[7]The Joint Operation Planning and Execution System is a mission essential GCCS application used to conduct joint planning, execution (including theater-level nuclear and chemical plans), and monitoring activities.

Readiness Assessment System Output Tool Development and Fielding

DISA and the Joint Staff did not provide sufficient assurance that the RAS Output Tool would satisfy user requirements. In addition, DISA and the Joint Staff did not meet RAS Output Tool development and fielding milestones. Those conditions occurred because DISA and the Joint Staff excluded potential users for extended periods, underestimated the level of effort to develop the software, did not fully document critical decisions on application selection and development estimates, and did not establish effective performance measurements to monitor development. In addition turnover of key personnel and failure of the application to meet minimum operational standards during testing delayed fielding. As a result, DoD has:

- spent $1.3 million as well as an unknown portion of an additional $9.2 million to develop the RAS Output Tool;[8]
- estimated that an additional $5.6 million will be required to complete development and field the application; and
- projected that the application will be fielded at least 5 years late.

In addition, delays in fielding made it necessary for the combatant commands and Services to either develop new applications or modify existing applications that would satisfy their unique requirements for performing readiness analysis.

Criteria

Global Command and Control System Development Strategy. In August 1993, the Assistant Secretary directed that GCCS should be developed using evolutionary initiatives designed to provide to users rapid and efficient delivery of command and control capabilities.

In June 1995, the Assistant Secretary further redelegated functional responsibilities for GCCS to ensure more effective management and life-cycle support for the system. One of the justifications provided for use of evolutionary acquisition initiatives for GCCS was that:

[8]In comments provided on the draft report DISA stated that RAS Output Tool expenditures totaled approximately $6.1 million between January 1998 and March 2002 of which $1.72 million was spent under the Defense Advanced Research Projects Agency management. DISA did not provide documentation supporting either amount.

> Traditional acquisition programs in the past have not been able to accommodate rigid milestones programs, contributing to stovepipe systems. GCCS . . . will allow new technology and leading edge capabilities to be integrated much faster throughout the warfighter community.

Requirements Evaluation Procedures. Chairman of the Joint Chiefs of Staff Manual 6721.01, "Global Command and Control System (GCCS) Functional Requirements Evaluation Procedures," March 15, 1997 (the GCCS Requirements Manual), prescribes the specific coordination process and the responsibilities for assessing, defining, developing, funding, submitting, prioritizing, and validating new GCCS requirements. The GCCS Requirements Manual establishes the following as the standard for GCCS program management effectiveness.

> The chief consideration of the development process is to accurately define what the warfighter needs, find the best solutions government or industry has to offer, and make a decision using select judgment criteria to implement the most cost-effective solution.

The requirements and responsibilities within the GCCS Requirements Manual and other Chairman of the Joint Chiefs of Staff guidance are projected to be revised to more closely align with the approved evolutionary acquisition strategy.[9]

Evolutionary Acquisition Strategy. On September 18, 2000, the Assistant Secretary approved the "Global Command and Control System (GCCS) Evolutionary Acquisition Strategy, Revision 2.2." The purpose of the evolutionary acquisition strategy is to align the GCCS acquisition strategy with DoD acquisition reform initiatives and oversight policies and support the rapid development and implementation of the GCCS.

RAS Business Plan. The Secretary of Defense, in the "FY 1999-2003 Defense Planning Guidance,"[10] July 2, 1997, requires that the Chairman of the Joint Chiefs of Staff recommend an integrated business plan for establishing a readiness assessment system capable of addressing the full spectrum of missions required by the U.S. Defense strategy. The resulting "RAS Business Plan," June 1998, outlines the development plan for the RAS. The prescribed development plan uses an incremental and dynamic approach to replace with newer technology the antiquated elements of GSORTS, while at the same time

[9]The evolutionary acquisition strategy further details the roles of the Joint Staff (J-3) as the GCCS requirements validator, the Assessment Working Integrated Process Team in researching and evaluating candidate solutions to validated GCCS requirements, and DISA in integrating selected candidates applications into GCCS.

[10]The Defense Planning Guidance, signed by the Secretary of Defense, provides firm guidance in the form of goals, priorities, and objectives (including fiscal constraints) that the Military Departments and Defense agencies use to develop Program Objective Memorandums.

add capabilities the changing global environment requires. The RAS Business Plan explains the intent of each RAS application and outlines development and funding timelines.

Performance Measurements.[11] The Clinger-Cohen Act of 1996 requires performance-based management[12] and results-based management to reduce the cost of programs and support the efficiency and effectiveness of information technology investments. The Office of the Secretary of Defense Memorandum, "Requirements for Compliance with Reform Legislation for Information Technology (IT) Acquisitions (Including National Security Systems)," May 1, 1997, implements the requirements of the Clinger-Cohen Act for the DoD. The memorandum implements performance measurements. The Clinger-Cohen Act requires Federal organizations to measure performance and devise processes that will obtain timely information on the progress of an investment in an information system. The Clinger-Cohen Act requires that organizations establish performance measurement processes that address independently verifiable milestones for measuring cost, timeliness, and application quality and capability of specified requirements. Performance measurement processes maximize the value as well as assess and manage the risks of information technology acquisitions.

User Requirements

DISA and the Joint Staff did not provide sufficient assurance that the RAS Output Tool would satisfy user requirements. The GCCS Requirements Manual specifies that, "user participation in requirements definition, throughout evaluation, development, and fielding applications, is critical to the successful implementation of GCCS requirements."

User Awareness and Concerns. Potential users of the RAS Output Tool did not have sufficient assurance that the RAS Output Tool will satisfy requirements. To assess user awareness of and participation in the RAS Output Tool requirement identification and development, we surveyed each of the four Services and six[13] of the nine combatant commands. As of December 2001, the U.S. European Command, the U.S. Pacific Command, the U.S. Special Operations Command, and the Air Force stated they had limited knowledge of

[11]Performance measurement is an assessment of the effectiveness and efficiency of information technology in support of the achievement of the missions, goals, and quantitative objectives of an organization through the application of outcome-based, measurable, and quantifiable criteria, compared against an established baseline to activities, operations, and processes.

[12]Performance-based management is a systematic approach to performance improvement through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using that data to drive performance improvement.

[13]We surveyed the following combatant commands because they are the most significant potential users of the RAS Output Tool: U.S. Central Command, U.S. European Command, U.S. Joint Forces Command, U.S. Pacific Command, U.S. Special Operations Command, and U.S. Southern Command.

the RAS Output Tool. In addition, the U.S. Central Command, the U.S. Southern Command, and the Navy all stated that they had no knowledge of the RAS Output Tool. Several of the users voiced concern that the application will not provide the functionality they require. For instance, the U.S. Joint Forces Command stated that the RAS Output Tool did not provide Joint Readiness Automated Management System (JRAMS)[14] functionality and performed significantly slower than JRAMS. Also, Air Force officials stated that they had limited communication about the application with the Joint Staff.

RAS Business Plan. The Joint Staff requested that the Secretary of Defense and the Services concur with the proposals for developing RAS as outlined in the RAS Business Plan. Each concurred; however, most officials voiced concern regarding the need to define requirements. In addition, the Army and the Air Force stated that the requirements needed to be validated. The Joint Staff did not request concurrence from the combatant commands.

Secretary of Defense Comments. The Secretary of Defense approved the RAS Business Plan on September 15, 1999. However, the approval of the plan included substantive comments that should be included when the plan is revised. The Secretary requested revisions that would accurately reflect up-to-date schedule and funding information as well as emphasize the criticality of involving the combatant commands and other users in the development process:

> The key to the utility and effectiveness of the RAS is the involvement of the CINCs [Commanders in Chief] and other users in the development process. Early involvement will improve understanding of the potential of RAS and will lead to the identification of new requirements.

Army Comments. The Army concurred with the RAS Business Plan on June 8, 1998. Army officials did not, however, believe that DISA and the Joint Staff performed an adequate mission needs analysis or validated the requirement for a readiness assessment application as comprehensive as RAS. To determine the precise information timeliness requirements at each level of command and to target information to user needs, the Army felt that a more thorough mission needs statement would be required. The Army also believed that the RAS Business Plan cost estimates were unrealistic.

Navy Comments. The Navy concurred with the RAS Business Plan on May 1, 1998. Navy officials stated that, although the RAS Business Plan provided a reasonable approach to developing a more comprehensive and user-friendly RAS, additional emphasis should be placed on determining user requirements to ensure that accurate information was available at the appropriate levels.

[14]The Defense Advanced Research Projects Agency developed JRAMS for the U.S. Joint Forces Command. JRAMS is a readiness analysis system that displays joint force status by accessing, compiling, and displaying information from disparate data sources such as the GSORTS and the Joint Operation Planning and Execution System databases.

Air Force Comments. The Air Force concurred with the RAS Business Plan on May 7, 1998. Air Force officials stated that the plan, however, did not detail Service requirements for RAS fielding and that a coherent, detailed vision of goals was needed. Officials recommended that the Joint Staff and DISA produce a statement of need and a requirements document with specific, detailed tasks and goals.

Marine Corps Comments. The Marine Corps concurred with the RAS Business Plan on April 29, 1998. Officials stated that, while readiness operational requirements were derived in response to areas important to the Joint Monthly Readiness Review, the Marine Corps believed, given the level of funding applied to the RAS effort, that RAS oversight should enable a review of future RAS requirements and a review of progress.

As of June 2002, DISA and the Joint Staff had not updated the RAS Business Plan and could not document that they both had acted on the direction the Secretary of Defense and the Services provided. In addition, DISA and the Joint Staff had not requested input or concurrence from the combatant commands.

Testing. DISA and the Joint Staff did not involve potential users in application testing for extended periods. With the exception of U.S. Joint Forces Command, the combatant commands and the Services had not participated in RAS Output Tool testing. U.S. Joint Forces Command readiness analysts stated that the functional qualification tests in which they participated were not adequate because the tests did not provide a comprehensive assessment of the functionality that the application would offer. Officials stated that the tests did not help the developers or the users discern whether the RAS Output Tool would be "operationally competent." Further, U.S. Joint Forces Command officials stated that the speed of the application and the quality of the graphics were not adequate. During calendar years 2000 and 2001 DISA provided limited hands-on testing experience, which has diminished the potential that users will gain confidence that the RAS Output Tool will satisfy their needs.

The Joint Staff and DISA did not fully document critical decisions on application selection. In addition, an adequate mechanism for measuring performance was not established.

Support for Software Transition. Joint Staff and DISA officials did not document how they concluded that the RAS Output Tool could be efficiently and effectively fielded. In 1998, DISA transitioned the RAS Output Tool software from the Defense Advanced Research Program Agency and began funding

development of the application in GCCS. Joint Staff officials assessed the status of the application upon transition from the Defense Advanced Research Program Agency. Officials concluded that:

- only moderate hardware and software modifications would be required to prepare the application for fielding, and
- the RAS Output Tool could be fielded within 18 months at a cost of less than $1 million.

Officials did not maintain documentation on development and fielding estimates.

Search for Candidate Solutions. DISA could not document that they either searched for or analyzed alternatives that would satisfy RAS Output Tool requirements. The GCCS Requirements Manual specifies that a search for candidate solutions for a new joint requirement should occur throughout the DoD. The purpose of the search was to determine the extent to which existing applications might economically provide the necessary functions in a timely manner. According to the GCCS Requirements Manual, GCCS working groups should solicit input on candidate applications that may satisfy new user requirements from the users. Once the candidate applications are identified, DISA should document any cost benefit analyses of technical solutions and recommend the best technical solution for GCCS implementation that satisfies the requirement, is cost effective, and is feasible to implement.

Analysis of Alternatives. Existing Service or combatant command tools might have met RAS Output Tool requirements, but the Joint Staff and DISA could not document that they conducted an appropriate search of candidate applications for the RAS Output Tool. DISA officials stated that they thought seven systems were considered as alternative solutions to satisfy RAS Output Tool requirements. However, neither Joint Staff nor DISA officials maintained any records that confirmed a search took place. Officials did not maintain any documentation that would support their conclusion that no other system would meet the requirement.

Joint Readiness Automated Management System. The Joint Staff could not document that they analyzed JRAMS as a solution that would meet RAS Output Tool requirements. The RAS Business Plan specifies that the RAS Output Tool include the technical infrastructure and the viewing capabilities of JRAMS. JRAMS is an operationally mature program that the U.S. Joint Forces Command, the U.S. European Command, and the U.S. Pacific Command have used. The functionality of JRAMS mirrors that of the RAS Output Tool, but without the historic and trend capability and certain Service-unique characteristics. The combatant commands, the Joint Staff, and DISA provided numerous laudatory comments about JRAMS. The Joint Staff documented that JRAMS was a possible alternative to the RAS Output Tool, further stating that it was the best application that would meet the requirements and that JRAMS was worthy of analysis. Both the Joint Staff and DISA officials were unable,

however, to provide a cost benefit analysis or any analysis on the technical feasibility of implementing JRAMS as a solution to satisfy RAS Output Tool requirements.

Performance Measurements. DISA and the Joint Staff did not develop an adequate mechanism that would measure program performance against standards. DISA and Joint Staff officials did not develop performance standards for GCCS that could be applied to the RAS Output Tool. Specifically, DISA and the Joint Staff did not establish a performance standard that tied the RAS Output Tool to a set of clearly understood, quantifiable performance measures that would objectively assess the reliability, technical quality, cost, and schedule baselines for the application. Without performance measurements, officials could not adequately evaluate the ability of the application to meet user needs.

Fielding of the RAS Output Tool

DISA and the Joint Staff did not meet development and fielding milestones for the RAS Output Tool. The projected fielding date for the RAS Output Tool slipped 44 months--from February 2000 to November 2003. Difficulties with the software, turnover of key personnel, and the RAS Output Tool failure to meet minimum operational standards caused numerous fielding delays. The table below depicts the delays in the projected RAS Output Tool fielding dates.

RAS Output Tool Fielding Delays

Documentation	Projected Completion Date	Time Past Initial Fielding Date
RAS Business Plan June 1998	February 28, 2000	N/A
In Progress Review November 1999	December 15, 2000	11 months
In Progress Review November 2000	September 18, 2001	1 year, 8 months
Working Group Meetings February 2001	October 23, 2001	1 year, 9 months
Executive Steering Committee July 2001	November 1, 2003	3 years, 8 months

Fielding Schedule. The RAS Business Plan specifies that DoD field no later than February 28, 2000, an initial version, plus four Service-unique versions of the RAS Output Tool. As of January 31, 2002, DISA delayed fielding the initial version of the RAS Output Tool four times and projected that the initial version would not be fielded until November 2003. DISA did not expect to complete fielding of the Service-unique versions of the RAS Output Tool until at least FY 2006.

In-Progress Reviews. During the RAS In-Progress Review held on November 24, 1999, DISA officials changed the initial fielding date of the RAS Output Tool to December 15, 2000, because of "difficulties with the initial software delivery being nonfunctional." MITRE, Incorporated, suggested in an independent assessment of the RAS Output Tool completed in November 1999 that the DoD estimates of costs, resources, and time were "aggressive." At a November 22, 2000, RAS In-Progress Review, DISA again rescheduled to September 18, 2001, the initial fielding date for the RAS Output Tool. DISA cited significant changes in key personnel as the reason for the 9-month schedule slippage.

GCCS Fielding Schedule. In February 2001, DISA chose to postpone fielding the RAS Output Tool and release the application as part of GCCS Version 3.4. DISA scheduled fielding of GCCS Version 3.4 and an initial version of the RAS Output Tool for October 23, 2001.

Redesign. After a Joint Staff review of the detailed readiness requirements, the RAS Executive Steering Committee[15] decided on July 25, 2001, to delay fielding the RAS Output Tool until November 2003. Joint Staff officials explained that revised performance requirements for the RAS Output Tool required a redesign of the basic readiness architecture. The Joint Staff believed that unless design flaws were rectified, the RAS Output Tool would continue failing to meet minimum operational standards. The projected fielding date of November 2003 coincides with the fielding date of GCCS Version 4.2.

Future Versions of the RAS Output Tool. DISA does not expect to complete fielding of the Service-unique versions of the RAS Output Tool until at least FY 2006. The RAS Business Plan specifies that all of the versions of the RAS Output Tool would be fielded by February 28, 2000. However, the four Service-unique versions of the application were postponed as a result of delays in fielding the initial version of the application.

RAS Output Tool Costs

DISA has spent $1.3 million to develop the RAS Output Tool. DISA has also spent an unallocated portion of an additional $9.2 million to support the RAS

[15]The RAS Executive Steering Committee is an informal process action team created to direct the development of GCCS applications. The Committee is made up of senior officials from the Directorates for Operations (J-3) and Command, Control Communications and Computers (J-6), Joint Chiefs of Staff, representatives of DISA headquarters staff, and GCCS Program Management Office.

Output Tool. DISA estimated that another $5.6 million is required to develop and field the RAS Output Tool. With the fielding of the RAS Output Tool 5 years behind schedule, the combatant commands and Services have already begun modifying existing applications or have already begun developing new applications that will satisfy their unique requirements for performing readiness analysis.

Quantifying RAS Output Tool Funds. Between January 1999 and December 2001, DISA spent more than $10.5 million for the RAS development costs. Figure 1 illustrates expenditures for readiness application support from January 1999 through September 2001.

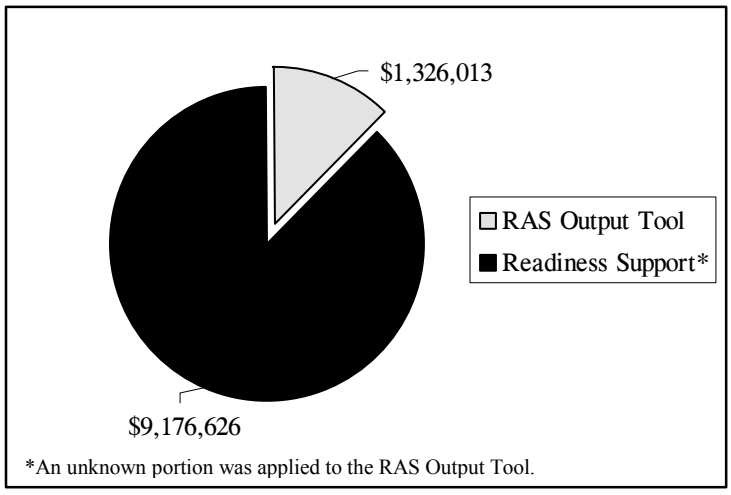

Figure 1. Readiness Application Support

RAS Output Tool Specific Funds. The $1,326,013 that DISA spent on development of the RAS Output Tool covered technical documents, enhancements, meeting support, and system redesign. During calendar year 2000, the RAS Output Tool continued to share enhancement costs with other readiness applications. The RAS Output Tool incurred $866,763 of enhancement costs during calendar year 2001, as illustrated in Figure 2. DISA also disbursed during calendar year 2001 $158,919 developing technical documents for the RAS Output Tool and $290,000 for a critical redesign of the application.

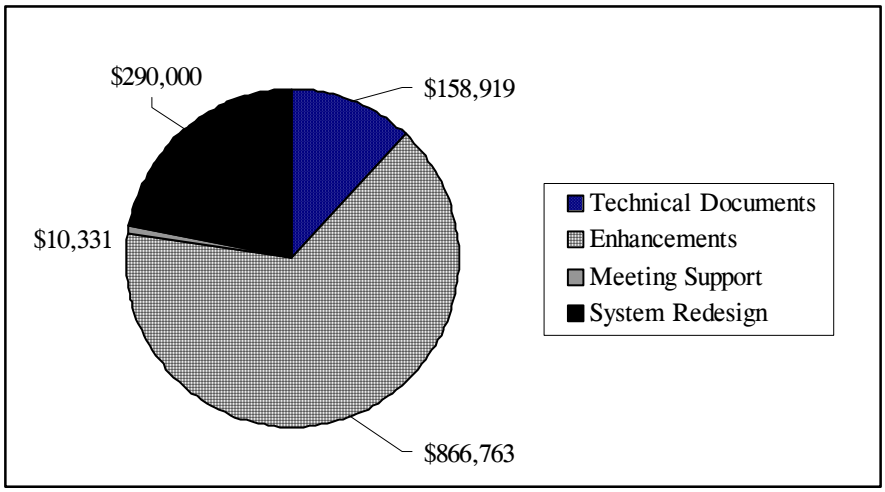

Figure 2. RAS Output Tool Development Expenses

Projected Future Costs. As of November 22, 2000, DISA projected that an additional $5.6 million over 5 years would be required to field the four Service-unique versions of the RAS Output Tool after the initial version of the application was fielded. The Army version is scheduled for fielding in October 2002, followed by the Navy version in December 2003, the Air Force version in January 2005, and the Marine Corps version in December 2005. Figure 3 illustrates the projected costs for Service-unique versions of the RAS Output Tool.

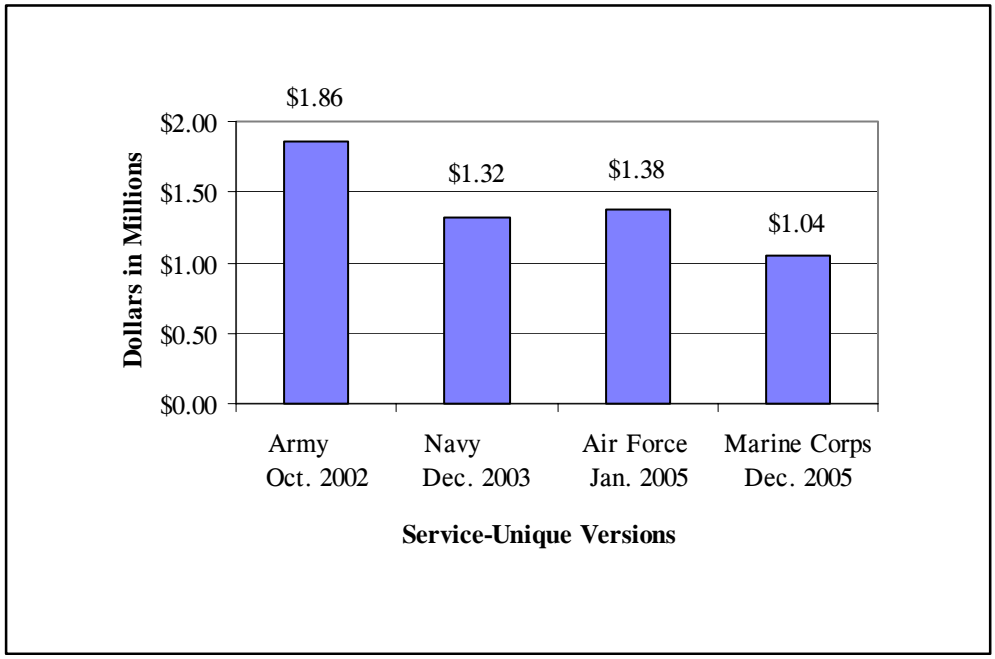

Figure 3. Projected Development Costs for Service-Unique Versions

Additional Readiness Assessment Tools. During the 5 years that the RAS Output Tool has been in development, the U.S. Joint Forces Command, the Army, and the Air Force have either developed new applications or modified existing applications to help satisfy unique readiness analysis requirements. Because of the absence of a GCCS baseline application for conducting readiness analyses, joint readiness action officers use various Service- and combatant command-unique applications to extract data they need from the GSORTS as well as the Joint Operation and Planning Execution System databases to prepare and present readiness analyses. Continued delays in fielding the RAS Output Tool have already required the users to perform readiness analysis of complex issues without the benefit of a mission essential, up-to-date automation product. Combatant commands and the Services have also continued to invest in upgrading existing systems or developing new readiness applications that will meet their needs. For instance, the U.S. Joint Forces Command continues to maintain the JRAMS and the Army continues to support the Army Readiness Management System. In addition, the Air Force has begun efforts to develop a new readiness analysis system that includes predictive capabilities.

Conclusion

The DoD has spent more than 5 years and millions of dollars attempting to develop and field a readiness analysis application. Also, DISA does not appear to have thoroughly investigated the costs and feasibility of fielding the RAS Output Tool and does not appear to be testing operational performance requirements that agree with user requirements. Consequently, the program has encountered numerous fielding delays and DISA started a redesign effort to make the application operational. Furthermore, the RAS Output Tool may not satisfy readiness analysis requirements for the user. In addition, DoD did not establish performance measures that would facilitate effective program management and oversight and help ensure DISA fields a readiness analysis application.

Management Comments on the Finding and Audit Response

Summaries of management comments on the finding and our audit response are in Appendix C.

Recommendations, Management Comments, and Audit Response

Added, Deleted, Renumbered, and Revised Recommendations. As a result of management comments, we added Recommendation 1. to share with the entire DoD readiness community readiness information that is beneficial. We deleted draft Recommendation 2.e., and renumbered all recommendations to

account for the changes. We revised draft Recommendations 1.a. and 2.a. to account for recent strides in the development of the RAS Output Tool and draft Recommendation 2.c. to improve clarity.

1. We recommend that the Under Secretary of Defense for Personnel and Readiness publish findings from research on readiness issues for the Defense Readiness Reporting System. The Joint Staff suggested that the results from that research would benefit the DoD readiness community.

2. We recommend that the Director for Operations, Joint Staff:

a. Proceed with planned testing in June 2002 of Readiness Assessment System Output Tool Version 4.0 requirements, request users attest that testing results met their requirements for fielding an application, and revalidate the remaining requirements with current users within the combatant commands, Services, and Defense agencies. If users do not attest that the tool is adequate for fielding, then revalidate prior to proceeding with any further development the mission need as well as all of the requirements.

Joint Staff Comments. The Joint Staff concurred with the intent of the recommendation but requested a modification in its execution. The Joint Staff will invite combatant commands, Combat Support Agencies, and the Services to review the more than 290 user requirements and any other requirements that will be collected and earmarked for RAS Output Tool versions beyond 4.0 after the June 2002 RAS Output Tool test is completed. DISA and the Joint Staff will then be able to publish the results of the test and ask the users to review and comment on the remaining user requirements that could potentially go into future RAS Output Tool software. The 395 requirements scheduled for release with GCCS Version 4.0 must not change. As of April 2002, DISA has satisfied 370 of the 395 requirements scheduled for inclusion in GCCS Version 4.0. Those requirements, however, cannot change without either unacceptably impeding or delaying the development process.

DISA Comments. DISA stated that the Joint Staff had reviewed the requirements and briefed the results to the RAS Executive Steering Committee in July 2001. The Joint Staff and DISA stated they plan to review the user requirements list again in May 2002 in preparation of RAS Output Tool functional user testing scheduled for June 2002. The Joint Staff plans to include combatant command, Combat Support Agency, and readiness divisions of the Services in the planned review of user requirements slated for versions beyond 4.0 of the RAS Output Tool as well as any additional requirements collected.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary of Defense (Programs) stated that the Joint Staff Directorate for Operations (J-3) had already revalidated in May 2001 the user requirements for the RAS Output Tool. In addition, the Joint Staff and DISA plan to review the user requirement list in May 2002 to prepare for functional user testing of the RAS Output Tool scheduled for June 2002.

Further, the Joint Staff plan to review user requirements as well as any additional requirements collected for RAS Output Tool versions beyond 4.0 with all users.

Audit Response. The Joint Staff comments are fully responsive. As a result of those comments, we revised the recommendation to require revalidation of the RAS Output Tool requirements only if the Version 4.0 testing proves the system is unsuitable for fielding. We request additional comments from the Joint Staff on the revised recommendation.

b. For future GCCS readiness applications, search Government and commercial sources for applications that will satisfy requirements and document the results.

Joint Staff Comments. The Joint Staff did not concur with the recommendation because a Joint Staff effort would be redundant and a waste of time and money. The Office of the Under Secretary of Defense for Personnel and Readiness (Under Secretary of Defense) looked at readiness applications throughout DoD to conceptualize and develop an improved readiness reporting system for DoD. Because the DoD readiness community would benefit, the Joint Staff suggested that the report should recommend that the Office of the Secretary of Defense publish findings. The Joint Staff will make sure future studies of GCCS candidate applications are thoroughly documented and archived.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that the Under Secretary of Defense, DISA, and the Joint Staff readiness reporting initiatives fulfill this requirement. The Joint Staff is involved in a similar process through the development of an operational requirements document for GCCS.

DISA Comments. DISA stated that Under Secretary of Defense initiatives to conceptualize and develop an improved readiness reporting system for DoD are fulfilling this requirement. The Joint Staff and DISA are involved in the effort. The Joint Staff is also involved in a similar process as part of the GCCS operational requirements document development. Additional efforts in this direction would be redundant.

Audit Response. Although the Joint Staff nonconcurred with the recommendation, the Joint Staff agreed to ensure that future studies of GCCS candidate applications are thoroughly documented and archived. The action satisfies the intent of the recommendation.

c. Develop performance standards that, as a minimum, provide a way of assessing the performance, cost, schedule, technical quality and reliability, and user satisfaction and formally report on the progress of the Readiness Assessment System Output Tool in meeting those standards.

Joint Staff Comments. The Joint Staff concurred with the recommendation.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that the recommendation tasks the Joint Staff to perform activities outside their established role. The GCCS program manager is responsible for managing cost, schedule and performance, and reporting in accordance with DoD Regulation 5000.2-R, "Mandatory Procedures For Major Defense Acquisition Programs and Major Automated Information System Acquisition Programs," April 5, 2002. The GCCS program manager is also responsible for developing a plan that integrates test, accreditation, and fielding the RAS Output Tool as part of GCCS. Office of the Secretary of Defense Director for Program Assessment and Evaluation independently assesses the program costs through review of the program's economic analysis. The Assistant Secretary provides oversight of the program while the Joint Staff and users provide assessment of the functionality that is delivered in the RAS Output Tool.

DISA Comments. DISA stated that the Joint Staff identifies, validates, and prioritizes GCCS requirements. The Joint Staff also provides to DISA objective and threshold functional performance parameters. The DISA GCCS program manager plans for the development, integration, testing, accreditation, and fielding of the RAS Output Tool as part of the larger GCCS program. The Joint Staff represents the users to assess how well the developed functions meet the validated requirements as well as satisfaction with developed functionality. However, the program manager assesses cost, schedule, and performance and then reports the overall GCCS status by way of quarterly Defense Acquisition Executive Summaries the acquisition oversight authority.

Audit Response. The Joint Staff comments are responsive. We recognize that the Joint Staff and the GCCS Program Manager have differing responsibilities in requirements development, program management and assessment. If each diligently performs their delegated responsibilities as outlined in the Deputy Assistant Secretary and DISA comments, we consider the responses meet the intent of the recommendation.

3. We recommend that the Director, Defense Information Systems Agency:

a. If testing in June 2002 does not meet minimum needs of the users for fielding as the users stated, then pause development of the Readiness Assessment System Output Tool until the questions with requirements development, user satisfaction, program documentation, and performance measurement have been fully addressed.

DISA Comments. DISA did not concur with the recommendation because a pause in development would duplicate the RAS Executive Steering Committee review that was performed during the spring and early summer 2001. Based on a review that validation of requirements, functional qualification tests, and user feedback, the RAS Executive Steering Committee directed in July 2001 that DISA reengineer the RAS Output Tool. Since October 2001, DISA has installed "pre-release, functioning versions of the RAS" output tool within the Joint Staff, headquarters of the four Services, two Service component headquarters, and two combatant command headquarters. The first test involving users of an operational system from combatant commands and the

Services is scheduled for June 2002. Another development pause would exacerbate the condition that caused scheduling delays. Delays at this stage for staff analysis would be inappropriate, costly, and counterproductive for delivering the capability to the user.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that delays for staff analysis at this stage would be inappropriate, costly, and counterproductive for delivering the capability to the user. The Joint Staff and DISA have taken actions that will ensure delivery of the required RAS Output Tool capability. Based on a review and validation of requirements, a functional qualification test, and feedback from the user, the RAS Executive Steering Committee directed in July 2001 that DISA reengineer the RAS Output Tool. In October 2001, DISA began installing pre-release and functioning versions of the RAS Output Tool within the Joint Staff, headquarters of the four Services, two of the Service component headquarters, and two combatant command headquarters. The first tests of an operational system were scheduled for June 2002. Users will be drawn from the combatant commands and the Services. Another development pause would exacerbate the condition that caused scheduling delays. Previous delays were the result of failures in the software to meet user requirements.

Joint Staff Comments. The Joint Staff recommended against this course of action. The rate of the developmental progress for the RAS Output Tool has never been greater than now. In October 2001, DISA began installing pre-release and functioning versions of the RAS Output Tool within the Joint Staff, headquarters of the four Services, two of the Service Component headquarters, and two combatant command headquarters. An additional prototype will soon be installed at another combatant command. Initial response to the prototype was favorable. The first user test of a production system was scheduled for June 2002. Users will be drawn from the readiness community, combatant commands, the Services, and at least one Combat Support Agency. A pause in the schedule would exacerbate the condition that caused scheduling delays. Previous delays were the result of failures in the software. Delays for staff analysis at this stage would be inappropriate. The recommendations the Inspector General of the Department of Defense described can be accomplished in a parallel effort.

Audit Response. DISA nonconcurred with the recommendation because a pause in the program would be detrimental. We acknowledge the advancement in RAS Output Tool development since the beginning of our audit, and also understand DISA, Deputy Assistant Secretary, and Joint Staff concerns about further delay for a system that is scheduled for release within the next few months. We modified the recommendation and request comments to the revised recommendation from DISA.

b. Develop and document cost and feasibility analyses of alternative solutions proposed to satisfy Joint Staff identified requirements.

DISA Comments. DISA concurred with the recommendation. DISA has a documented process in the GCCS evolutionary acquisition strategy for developing cost and feasibility analyses of candidate solutions. The GCCS

Block IV Implementation Plan will include the capabilities that successfully pass cost and feasibility analyses and show how the capabilities are integrated into GCCS. DISA plans to complete the Block IV Implementation Plan, provide it to the GCCS Integrating Integrated Product Team, and submit it for GCCS Milestone Decision Authority approval in the fourth quarter of FY 2002.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that the Joint Staff is responsible for developing GCCS requirements, and not identifying solutions. The process of identifying candidate solutions and cost and feasibility analyses for each solution is documented in the approved GCCS evolutionary acquisition strategy.

Audit Response. The DISA comments are fully responsive. As stated by DISA and the Deputy Assistant Secretary, the GCCS evolutionary acquisition strategy and the Block IV Implementation Plan will include the documented cost and feasibility analyses of alternative solutions.

c. Survey the users during the application development process to ensure the final product yields a user-friendly interface.

DISA Comments. DISA concurred with the recommendation, stating that an ongoing installation of a series of engineering drops has taken place at various locations. The installations allow users a hands-on evaluation and directly contribute to the development effort. In addition to the upcoming functional user's test in June 2002, users are encouraged to submit evaluations at any time during the development process. The Joint Staff is planning an additional user review panel designed to evaluate the requirements not incorporated into the RAS Output Tool schedule. Additional requirements for future versions of the RAS Output Tool will also be solicited.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that the recommendation is vague and does not indicate the purpose of the survey. The Deputy Assistant Secretary affirmed his support for user involvement at appropriate points in the development process. The ongoing process of installing a series of engineering drops at various locations allow users an opportunity for hands-on evaluation and directly contribute to the development effort. In addition to the upcoming functional user's test in June 2002, users are encouraged to submit evaluations at any time during the development process. The Joint Staff is planning an additional user review panel designed to evaluate the requirements not incorporated into the RAS output tool schedule. Additional requirements for future versions of the RAS output tool will also be solicited.

Audit Response. The DISA comments are fully responsive. We modified the recommendation to clarify the purpose of the survey. Planned actions by DISA and the Joint Staff will ensure user needs are met.

d. Support the Joint Staff in the development and application of concrete, measurable, and quantifiable performance measurements that can be accurately tested on the Readiness Assessment System Output Tool.

DISA Comments. DISA concurred with the recommendation, stating that the Assistant Secretary tasked the Joint Staff to develop a GCCS operational requirements document, which will contain objective and threshold performance parameters that are measurable and testable. DISA supports development of the GCCS operational requirements document with participation in a Joint Staff-established and led working group. With that participation, DISA has already completed action on this item.

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that the Joint Staff is responsible for ensuring that requirements are defined with measurable and testable threshold and objective values. The Assistant Secretary tasked the Joint Staff to develop an approved GCCS operational requirements document with validated key performance parameters by October 2002. The requirements document will include RAS Output Tool threshold and objective requirements.

Audit Response. The DISA comments are fully responsive. Actions taken by DISA, the Assistant Secretary and the Joint Staff to develop key performance parameters in the GCCS operational requirements document will provide the needed objective performance measurements.

e. Maintain comprehensive records of milestones, goals, and key decisions that document Readiness Assessment System Output Tool progress.

DISA Comments. DISA concurred with the recommendation, stating that the GCCS Block IV Implementation Plan will document how the RAS Output Tool will be integrated into GCCS.

Appendix A. Scope and Methodology

Scope

We reviewed the guidance and procedures that the Joint Staff and DISA used to monitor readiness issues, and the guidance and procedures that pertained to requirements determination and fielding of appropriate GCCS capabilities.

Work Performed. We reviewed joint DoD guidance that governs application and management of GCCS. We analyzed Chairman of the Joint Chiefs of Staff (CJCS) Instruction 3170.01B, "Requirements Generation System," April 2001; CJCS Instruction 6721.01A, "Global Command and Control Management Structure," November 2000; CJCS Manual 6721.01, "Global Command and Control System (GCCS) Functional Requirements Evaluation Procedures," March 1997; "Readiness Assessment System Business Plan," June 1998; "Global Command and Control System (GCCS) Transitional Evolutionary Phase Implementation Plan (EPIP) for Phase III," September 2000; "Global Command and Control System (GCCS) Transitional Evolutionary Phase Implementation Plan (EPIP) for Phase IV," unsigned draft dated June 2001; "Global Command and Control System (GCCS) Evolutionary Acquisition Strategy, Revision 2.2" signed September 18, 2000; "Guidelines for Successful Acquisition and Management of Software-Intensive Systems, Volume 1 - Version 3.0," May 2000; and Office of the Secretary of Defense Memorandum "Requirements for Compliance with Reform Legislation for Information Technology (IT) Acquisitions (Including National Security Systems)," May 1, 1997. The documentation reviewed covered the period from March 1997 through January 2002.

High-Risk Area. The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the DoD Systems Modernization high-risk area.

Methodology

During the audit, we evaluated methods that DoD used to develop and field GCCS applications. Specifically, we reviewed policies and guidance that govern Joint Staff and DISA responsibilities for identifying, documenting, and validating requirements for the RAS Output Tool. We also:

- analyzed minutes for Readiness Assessment Working Group meetings, RAS In-Progress Reviews, RAS Executive Officer Working Group meetings, and GSORTS Service meeting minutes from November 1998 through July 2001;
- interviewed officials from the Joint Staff and DISA responsible for defining, developing, and implementing the RAS Output Tool;

- reviewed documents the readiness community within the Joint Staff, DISA, the Army, U.S. Joint Forces Command, Defense Advanced Research and Planning Agency, and MITRE, Incorporated provided in support of the RAS Output Tool development, testing, and fielding;

- reviewed user surveys from and solicited comments of potential users throughout the U.S. Central Command, the U.S. European Command, the U.S. Joint Forces Command, the U.S. Pacific Command, the U.S. Southern Command, the U.S. Special Operations Command, the Services; and

- analyzed the statement of work, periodic contractor progress reports, and funding documents that support the $10.5 million in RAS development costs under contract number DCA100-99-C-4019 that cover January 1999 through January 2002.

Use of Computer-Processed Data. We did not use computer-processed data to perform this audit.

Audit Dates and Standards. We performed this audit from August 2001 through January 2002 in accordance with generally accepted government auditing standards. Accordingly, we included tests of management controls considered necessary.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD. Further details are available on request.

Management Control Program Review

DoD Directive 5010.38, "Management Control (MC) Program," August 26, 1996, and DoD Instruction 5010.40, "Management Control (MC) Program Procedures," August 28, 1996, require DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of those controls.

Scope of the Review of the Management Control Program. We reviewed the adequacy of management controls at the Joint Staff and DISA related to GCCS. We reviewed management controls over GCCS requirements generation and program implementation. We also reviewed management's self-evaluation applicable to those controls.

Adequacy of Management Controls. We identified material management control weaknesses within the Joint Staff and DISA as defined by DoD Instruction 5010.40. Specifically, management controls of the Joint Staff for GCCS oversight and requirements development did not exist. Recommendations 2.a., 2.b., and 2.c., if implemented, will improve GCCS management and development for new applications in GCCS. Also, management controls in DISA for GCCS did not ensure that GCCS RAS Output Tool functionality was developed, fielded, and documented with requirements

that the users determined were critical. Recommendation 3.a., 3.b., 3.c., 3.d., 3.e., if implemented, will improve GCCS management and development of new applications in GCCS. A copy of the report will be provided to the senior officials responsible for management controls at the Joint Staff and DISA.

Adequacy of Self-Evaluation. The Joint Staff did not address GCCS as an assessable unit and, therefore, did not identify or report the material management control weaknesses identified by the audit. DISA addressed management controls as an assessable unit and performed tests of controls on areas applicable to our audit objectives. DISA officials did not perform adequate tests of controls to ensure that applications such as RAS had effective program management that includes appropriately developed user requirements and adequate baseline tracking of program status.

Prior Coverage

During the last 5 years, one General Accounting Office report that related to military readiness and two Inspector General of the Department of Defense (IG DoD) reports that pertained to GCCS were issued. The General Accounting Office and IG DoD conducted multiple reviews of GCCS or GCCS applications. The General Accounting Office reports can be accessed on the Internet at http://www.gao.gov. Unrestricted IG DoD reports can be accessed at http://www.dodig.osd.mil/audit/reports.

General Accounting Office

General Accounting Office Report No. NSIAD-98-68, "Military Readiness Reports to Congress Provide Few Details on Deficiencies and Solutions," March 1998

IG DoD

IG DoD Report No. D-2002-084, "Guidance for the Global Command and Control System Common Operational Picture," May 1, 2002

IG DoD Report No. D-2001-157, "Global Command and Control System Meteorological and Oceanographic Application," July 11, 2001

Appendix B. RAS Applications

The RAS Business Plan prescribes an incremental approach for replacing outmoded elements of GSORTS with newer technology while adding capabilities that the changing global environment requires. The original RAS consisted of four independent components. However, two of the four components were cancelled. The RAS Output Tool is one of the applications designed to be merged into the homogenous RAS system. The other two applications originally planned for the system were the Automated Joint Monthly Readiness Review and the Joint Exercise Management Program III.

Automated Joint Monthly Readiness Review. Through automated, near real-time collated, classified briefings and improved scenario analysis, the Automated Joint Monthly Readiness Review component of RAS was intended to streamline the Joint Monthly Readiness Review preparation process. As originally envisioned in 1996, the Automated Joint Monthly Readiness Review would have served as a combatant command Joint Monthly Readiness Review reporting tool. The Joint Monthly Readiness Review reporting process matured and integrated commercial software, secure message, and video teleconference technologies, which lessened the need for additional automation. On August 28, 2000, the Joint Staff recommended that DISA discontinue funding and developing the Automated Joint Monthly Readiness Review and abandon plans to make the application a GCCS mission application.

Joint Exercise Management Program III. The Joint Exercise Management Program III would have enabled the user to import Joint Mission Essential Task List training assessment ratings that units and combatant commands complete within the Joint Training System. To help action officers prepare Joint Monthly Readiness Report briefings, the Joint Exercise Management Program III would have allowed access to Joint Mission Essential Task List assessments from within the Automated Joint Monthly Readiness Reporting system. Access to Joint Mission Essential Task List assessments was incorporated into the Automated Joint Monthly Readiness Review, and the Joint Training Information Management System replaced the Joint Exercise Management Program III. The Joint Exercise Management Program III will not be included in RAS.

RAS Input Tool. The RAS Input Tool will allow near real-time reporting, improve the accuracy of GSORTS data, and support crisis planning through direct registration capabilities and status reporting functions. The RAS Input Tool will enable Service, joint, and coalition units to submit user-friendly reports directly to the GSORTS database. The application is designed to replace Service-unique input applications with a single application that is easily modified as new requirements are added, thus eliminating costly and time-consuming requirements that synchronize the system maintenance contracts of the Services. The RAS Input Tool allows efficient updates that help the user keep pace with rapidly changing world conditions or reporting requirements. Once reports are submitted to the master database, critical, tactical, and operational readiness information would be immediately accessible to decision makers by way of the RAS Output Tool. The Marine Corps received the RAS Input Tool in

April 2002 along with the release of GCCS Version 3.4. As of June 19, 2002, DISA projected that the Air Force would receive the RAS Input Tool during the third quarter of FY 2003. The Army and the Navy are not required to adopt the RAS Input Tool because their Service-specific tools are designed to meet title 10 responsibilities beyond the scope of the RAS Input Tool.

Appendix C. Management Comments on the Report and Audit Responses

In addition to the responses to the recommendations, the Deputy Assistant Secretary of Defense (Programs), Director, Joint Staff, and the Director, DISA provided comments on the audit report. Their comments are summarized and presented by topic along with the associated audit responses.

Corrective Actions

Deputy Assistant Secretary Comments. The Deputy Assistant Secretary stated that DISA and the Joint Staff had already identified and initiated corrective actions that mirror the recommendations of this audit. The Deputy Assistant Secretary stated that plans for cost and feasibility analyses will be completed by the fourth quarter of FY 2002 and that the Joint Staff was tasked to develop an operational requirements document.

Joint Staff. The Joint Staff stated that the audit was limited to a historical review and failed to consider current and future development plans for the RAS Output Tool. The timeline and reengineering effort place the RAS Output Tool on a development schedule that addresses previously discovered performance shortfalls and involves users from the readiness community.

DISA Comments. DISA stated that the timeline for the RAS Output Tool incorporates a major reengineering effort that will produce a robust and responsive tool that will meet user requirements. DISA acknowledged that adequate mechanisms for measuring performance were not yet established but a GCCS operational requirements document would satisfy the requirement.

Audit Response. We recognize and commend the efforts of the Assistant Secretary for reducing the earlier experiments in tailoring the acquisition processes and bringing the program into conformity with DoD acquisition management requirements. We also recognize the Joint Staff program leadership and DISA project development efforts. A GCCS operational requirements document is clearly needed. We have some concerns, however, that the operational requirements document and the performance standards will be developed to justify already completed work rather than to satisfy current needs. We will address our concerns in the audit followup process.

Readiness Assessment System

Joint Staff Comments. The Joint Staff stated that the draft report failed to recognize the distinction between the RAS and the RAS Output Tool. The Joint Staff also stated that the historical view presented in the report failed to consider current and future development plans for the RAS Output Tool.

DISA Comments. DISA stated that the report unfairly applied standards intended for the RAS to the RAS Output Tool.

Audit Response. The report establishes the relationship between the RAS Output Tool and the RAS discussed on page 2 of this report. The additional RAS applications are discussed in Appendix B. The Joint Staff and DISA could not provide standard criteria governing the development of the RAS Output Tool that was more current than the June 1998 RAS Business Plan. The Joint Staff established the requirement in a June 1998 message that the RAS Output Tool replace Service and combatant command tools while retaining JRAMS functionality. At no point in the report do we hold the RAS Output Tool to standards intended for other applications. Unless otherwise qualified, we interpreted the term "RAS" in the RAS Business Plan to mean all components of the RAS.

User Requirements

Joint Staff Comments. The Joint Staff stated that the lack of community awareness noted in the survey is not surprising considering personnel turnover rates compared to RAS development timeline. Users do not normally participate in the developmental phase of the system acquisition process, nor do they conduct formal developmental testing because they would likely provide conflicting or confusing feedback that would be more likely to disrupt, not enhance the process. RAS requirements were briefed as necessary to the Global Command and Control Readiness Working Group and the Global Command and Control Readiness Working Group User Review Panel. Since functional versions of RAS Output Tool have been provided to various commands, perhaps the Inspector General, Department of Defense failed to interview the right people. Although the Joint Staff acknowledged that JRAMS had superior speed to RAS, the Joint Staff also criticized the comparison to the RAS Output Tool. The Joint Staff disagreed that DISA and the Joint Staff have not provided sufficient assurance that the RAS Output Tool will satisfy user requirements. The Joint Staff amassed a total of 734 requirements for RAS Output Tool from combatant commanders and Services. The list is constantly validated, updated and documented, with 395 requirements incorporated in RAS Output Tool 4.0.

DISA Comments. DISA agreed that potential users lacked the knowledge and involvement with the RAS Output Tool at the time of the audit. However, DISA is currently developing the RAS Output Tool based on a total of 734 requirements derived from Combatant Commands and Services. These requirements originated from a series of Joint Application Development sessions held between mid-1997 and 1999 with Combatant Command and Service representatives and approved by the Joint Staff. DISA acknowledged that the

lack of speed was a major driving force behind the recommendation to reengineer the RAS Output Tool in July 2001. DISA added that the RAS Output Tool is slower than JRAMS because the RAS Output Tool must search and provide more data. DISA recently provided pre-release engineering drops of the RAS Output Tool to several users.

Audit Response. We contacted users identified by the Joint Staff as representing the readiness user community. Neither the Joint Staff nor DISA could document that the RAS Output Tool requirements were generated from the Joint Application Development sessions or that RAS users other than the Joint Staff constantly validated and updated requirements. The Joint Staff revalidation in May 2001 of user requirements did not include end-user involvement. The Joint Staff stated, in response to renumbered Recommendation 2.a., that as a developmental necessity the RAS Output Tool requirements were "locked-in and will not change because software engineers cannot hit a moving target resulting from changing requirements." Such a policy appears reasonable in cases where fielding dates have not slipped more than 2 years and development initiated based on an approved operational requirements document. In addition, users were not able to develop an expectation for RAS Output Tool system speed, due to the limited user involvement, and only had JRAMS performance to draw a comparison.

Air Force guidance on software process improvement, Guidelines for Successful Acquisition and Management of Software-Intensive Systems, Volume 1 - Version 3.0, May 2000, emphasizes the need for the user and developer to work together:

> As long as programmers are writing code, they are making design decisions, just at a more detailed level. Many of these details will impact the usability and performance of the system, just not at a high enough level for the people who wrote the requirements to be aware of them. The field users of such systems, however, will almost always find that systems developed blindly from requirements documents are inconvenient and unwieldy in operational use. Truly superior usability can only be obtained when the developers have an in-depth knowledge of actual field conditions. While suppliers should start from official requirements, these must be recognized as a starting point and that much more detailed knowledge is required before the system can actually be built. The key is to make the supplier responsible for devising, defining, and using a process that uncovers true operational requirements.

RAS Business Plan

Joint Staff Comments. Although the Joint Staff acknowledged issues involving validation of requirements, the Joint Staff nonconcurred with conclusions drawn from the RAS Business Plan and the inclusion of the Secretary of Defense comments which applied to future RAS development. The Joint Staff also stated that the Army comments applied to the full RAS business plan; not specifically the RAS Output Tool. The Army was worried that RAS Business Plan was too invasive, not that RAS Output Tool would not meet their need. The Joint Staff

stated that Service comments were incorporated into the RAS Business Plan and agreed with DISA that standards for the entire RAS were applied to the RAS Output Tool.

DISA Comments. DISA stated that the draft report misrepresented comments that the Secretary of Defense and the Army provided. The Secretary of Defense comments were to be included in a section of the RAS Business Plan that pertains to future applications. DISA contends the Army had no concerns about the ability to of the RAS Output Tool meeting Army needs.

Audit Response. Although the Secretary of Defense comments were included in a section of the RAS Business Plan that pertains to future applications, those comments addressed the RAS without qualification. Unless stated otherwise, we interpret references to the "RAS" to include all RAS applications. We also believe the Army comments that DISA provided in support of the DISA position speak for themselves.

> The recurring concepts supporting RAS are "commanders at all levels" and "near real time" readiness information. Army believes a more thorough mission needs analysis is needed to determine more precisely the information timeliness needs at each level of command, and to target that information to the needs of the recipient. For instance, policy makers do not need minute details or 24-hour readiness updates to carry out policy-making responsibilities. Additionally, in the world of deliberate planning, current readiness data is not useful . . . Only in the sourcing of contingency operation force requirements is current readiness a factor.
>
> RAS seems to be driven more by the fact that the technology to achieve a directed telescope to the forward foxhole will soon be available than by any validated need. Army acknowledges that RAS consists of a grouping of systems and software, which are already in some state of development or fielding, many of which are already funded and are intended to be resident in the GCCS/GCSS suites. However, Army believes that the true cost of a comprehensive RAS has not been determined. Finally, Army is concerned that the potential for micromanagement inherent in RAS represents an intentional or unintentional intrusion into the Services' title X responsibilities to provide ready forces to the combatant commanders.

Testing

Joint Staff Comments. The Joint Staff stated that the RAS Output Tool was tested on numerous occasions and that scheduling delays were a direct result of system failures identified during testing. The Joint Staff stated that U.S. Joint Forces Command comments on the adequacy of the functional qualification tests were typical of users who apply standards for mature systems to evolving systems. Involving users too early in the process usually erodes their confidence in the system and can have the opposite effect as recommended by the Office of the Inspector General, Department of Defense.

DISA Comments. DISA stated that when users are involved too early in the testing process, confidence in the final system could be irretrievably damaged.

Users not eminently familiar with systems development methodology would provide confusing or conflicting feedback. However, once the product reaches the latter stages of developmental testing and clearly during the operational testing phase, user input is essential. The Joint Staff mandate ensures that functional user and operational testing heavily rely on user representatives. For example, to obtain feedback on the JRAMS functions being incorporated into the RAS Output Tool, DISA asked the U.S. Joint Forces Command to view a RAS Output Tool demonstration. The U.S. Joint Forces Command demonstration resulted in eight new validated requirements. A functional user test was scheduled for June 2002.

Audit Response. Developing a product without continued user involvement increases the risk that the product would not satisfy user's needs, particularly after a long development period. While there are times when lessened user involvement is understandable, a multiyear cessation is harder to defend without verifying a continued user's need. Neither the Joint Staff nor DISA could provide any documentation that users other than the Joint Staff and U.S. Joint Forces Command had consulted in the development of the RAS Output Tool. Only the Joint Staff appears to have been involved in the May 2001 requirements validations. We support the recent activity intended to expose the users to the pre-release engineering drop of the proposed RAS Output Tool and the planned functional user testing.

Documentation of Decisions

Joint Staff Comments. The Joint Staff stated that a review of Joint Staff records did not reveal the documentation that would support a search for candidate solutions and analysis of alternatives took place. By the time the Secretary of Defense approved the RAS Business Plan, the milestone decision was made that DISA proceed with development of the RAS Output Tool by building on the work the original development contractor began. There is also a volume of correspondence covering the period from January 1998 to July 2000, which provides considerable detail into the origin, shortcomings and missed milestones for the RAS Output Tool. There is a much smaller volume covering the current contract covering RAS applications in general, including the RAS Output Tool.

DISA Comments. DISA stated that critical development and fielding decisions have been documented with a great deal of correspondence that has provided considerable detail into milestones and decisions.

Audit Response. Neither the Joint Staff nor DISA provided any documentation that supported any analysis of alternatives, user involvement in revalidation, or other documentation from application development sessions. DISA and the Joint Staff did not demonstrate in the documentation provided that an analysis had taken place of cost, performance, and schedule that applied to the RAS Output Tool. The Joint Staff provided evidence of a DISA request for requirement revalidation. However, the Joint Staff response did not show user involvement in the revalidation.

Development of Alternative Applications

Joint Staff Comments. The Joint Staff disagreed that delays in fielding of the RAS Output Tool required the combatant commands and Services to either develop new applications or modify existing applications. The Joint Staff stated that the RAS Output Tool was never intended to replace combatant command or Service tools, and that the RAS Input Tool was the only one of the four original RAS applications designed to do so.

DISA Comments. DISA disagreed with the connection between RAS Output Tool delays and the development of combatant command or Service tools. The RAS Input Tool was designed to replace selected Service input tools, but the RAS Input Tool is not an application for performing readiness analysis.

Audit Response. The Joint Staff message that terminated JRAMS development in 1998 states that the RAS Output Tool will contain all of the JRAMS functions. The U.S. Joint Forces Command has continued to fund JRAMS development because they believe that the RAS Output Tool will not fulfill the needs that JRAMS supplies. The RAS Business Plan states that the RAS Output Tool will include the functions of the Army Readiness Management System, which the Army continues to run and maintain. The Air Force is developing the Predictive Readiness Assessment System. Predictive functionality of the RAS Output Tool will provide unit trends over a period of time and will project readiness levels of particular units.

Performance Measures

Joint Staff Comments. DISA and the Joint Staff did establish effective performance measures to monitor development and measure success, or failure, against a specific set of criteria. Every single approved requirement stated for RAS Output Tool version 4.0 has a documented test procedure and an expected outcome.

DISA Comments. DISA agreed that an adequate mechanism for measuring performance was not established. In November 2000, a GCCS program management review recognized the need for a GCCS operational requirements document which will identify objectives and thresholds for operational requirements, as well as key performance parameters for the GCCS system, to include RAS Output Tool. The Joint Staff is currently developing a GCCS operational requirements document.

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Under Secretary of Defense for Personnel and Readiness
Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)

Joint Staff

Director, Joint Staff
  Director, Operations (J-3)
  Director, Command, Control, Communications, and Computers (J-6)

Department of the Army

Auditor General, Department of the Army

Department of the Navy

Naval Inspector General
Auditor General, Department of the Navy

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
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Unified Commands

Commander, U.S. European Command
Commander, U.S. Pacific Command
Commander, U.S. Joint Forces Command
Commander, U.S. Southern Command
Commander, U.S. Central Command
Commander, U.S. Space Command
Commander, U.S. Special Operations Command

Unified Commands (cont'd)

Commander, U.S. Transportation Command
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Congressional Committees and Subcommittees, Chairman and Ranking Minority Member

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform
House Subcommittee on Government Efficiency, Financial Management, and Intergovernmental Relations, Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform
House Subcommittee on Technology and Procurement Policy, Committee on Government Reform

Assistant Secretary of Defense (Command, Control, Communications, and Intelligence)

COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
6000 DEFENSE PENTAGON
WASHINGTON, DC 20301-6000

May 28, 2001

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Audit Report on Global Command and Control System - Readiness Assessment System Output Tool (Project No. D-2001LG-0101.01)

Your memorandum, March 20, 2002, requested review and comment for the subject proposed audit report. OASD(C3I) comments are attached.

This second in a series of DOD IG reports on Global Command and Control System (GCCS) unfortunately selected a topic that DISA and the Joint Staff had already identified and initiated corrective actions. The actions initiated by DISA and the Joint Staff match the recommendations in this report, and have largely been completed. It is not appropriate at this point to conduct an additional unplanned validation of user requirements.

OASD(C3I), DISA and the Joint Staff have identified similar problems with the GCCS Joint Operational Planning and Execution System (JOPES). Actions have been initiated to correct these problems also.

The OASD(C3I) point of contact for this matter is COL Michael Krieger, 703-607-0259, who is assigned to the C2 Programs Directorate.

Dr. Michael S. Frankel
Deputy Assistant Secretary of Defense
(Programs)

Attachment
As Stated

Final Report Reference

OASD (C3I) Comments on the Draft Audit Report on Global Command and Control System - Readiness Assessment System Output Tool (Project No. D-2001LG-0101.01)

Direct quotes from the DODIG report are presented in Italics with page numbers from the draft audit.

Recommendations:

1. Recommendations for the Director for Operations, Joint Staff;

Revised and renumbered as Recommendation 2.a. Page 15

a. *"Revalidate the original Global Command and Control System Readiness Assessments Output Tool requirements with current users within the Unified Commands, Services, and Defense Agencies and ensure that future GCCS user requirements are validated and implemented in accordance with current guidance."* (Page 14)

C3I non-concurs. JS J3 DDGO-R already revalidated the full set of RAS OT user requirements in May 2001 in preparation for the Functional Qualification Testing in June 2001. The results were briefed to the Readiness Assessment System Executive Steering Committee (RAS ESC) in July 2001. The Joint Staff and DISA will review the full user requirement list again in May 2002 in preparation for RAS OT Functional User Testing scheduled for June 2002. Joint Staff has indicated they will review user requirements slated for RAS OT versions beyond 4.0 as well as any additional requirements collected. Joint Staff has indicated this effort will include all Combatant Command, Combat Support Agency, and Service readiness divisions.

The recommendation regarding future requirements is confusing. If the reference is to RAS OT requirements only, delete the phrase "GCCS user requirements" and replace with "RAS OT user requirements. If the reference is to user requirements for all of GCCS, C3I non-concurs. As an ACAT-IAM program, GCCS user requirements are documented in a JROC approved ORD. The Joint Staff J-3 is transitioning from a GCCS Requirements Identification Document (RID) to a JROC approved GCCS-Joint ORD. The GCCS-Joint ORD is scheduled to go out for stage I JROC coordination in June 2002. A JROC approved ORD will ensure GCCS-Joint user requirements are validated and implemented in accordance with current guidance.

Renumbered as Recommendation 2.b. Page 16

b. *"For future GCCS Readiness applications, search Government and commercial sources for applications that will satisfy requirements and document the results of those searches."* (Page 14)

C3I non-concurs. Additional efforts in this direction would be redundant. Current DUSD Personnel and Readiness initiatives to conceptualize and develop an improved readiness reporting system for DOD are fulfilling this requirement. The Joint Staff and

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DISA are involved in this effort. The Joint Staff is also involved in a similar process as part of the GCCS ORD development.

c. *"Develop performance standards that as a minimum, provide a way of assessing the performance, cost, schedule, technical quality and reliability, and user satisfaction and formally report on the progress of the Readiness Assessment System Output Tool in meeting those standards".* (Page 15)

Renumbered as Recommendation 2.c. Page 16

C3I non-concurs. The recommendation tasks the Joint Staff to perform activities outside their established role. The Joint Staff is responsible to identify, validate, and prioritize GCCS RAS OT requirements, as well as provide measurable and testable threshold and objective performance parameters. It is the GCCS PM's responsibility to manage cost, schedule and performance, and report in accordance with DoD 5000.2-R. PA&E independently assesses the program costs through review of the program's economic analysis. The GCCS program manager (PM) is responsible for building the plan to develop, integrate test, accredit and field the Readiness Assessment System Output Tool (RAS OT) as part of GCCS. OSD provides appropriate acquisition oversight of the program while the Joint Staff and users provide an assessment on the functionality delivered in RAS OT.

2. Recommendations for the Director, Defense Information Systems Agency,

a. *"Pause development of the Readiness Assessment System Output Tool until the Joint Staff fully addresses requirements development, user satisfaction, program documentation, and performance measurement."* (Page 15)

Revised and renumbered as Recommendation 3.a. Page 17

C3I non-concurs. A delay for the sake of staff analysis would be inappropriate, costly, and counterproductive to delivering capability to the user community. The Joint Staff and DISA have taken appropriate actions to ensure delivery of the required RAS OT capabilities. A pause was taken during the spring and early summer of 2001 under the auspices of the RAS ESC. Based upon a full review and validation of requirements, a thorough Functional Qualification Test, and feedback from the user community, the RAS ESC directed DISA in July 2001 to reengineer the RAS OT. Beginning with the installation in October 2001, pre-release, functioning versions of the RAS OT are resident at JS J3 DDGO-R, JFCOM, EUCOM, TRANSCOM, HQ US Navy, HQ US Air Force, HQ US Army, HQ USMC, MARFORLANT and MARFORRES. The first test of an operationally representative system involving users from Combatant Commands and Services is scheduled for June 2002. At this point another development pause would further exacerbate the same condition that has brought the most negative scrutiny, more scheduling delays. Previous delays were caused by failures of the software to meet user requirements.

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Renumbered as Recommendation 3.b. Page 18

b. *"Develop and document cost and feasibility analyses of solutions that are identified by the Joint Staff."* (Page 15)

C3I non-concurs. The Joint Staff is not responsible for identifying solutions. The Joint Staff is responsible for developing GCCS requirements. The process to identify candidate solutions and develop cost and feasibility of each solution is documented in the approved GCCS Evolutionary Acquisition Strategy. The GCCS Block IV Implementation Plan (formally known as the Phase IV Evolutionary Phase Implementation Plan) will include the capabilities that successfully pass this analysis and show how they are to be integrated into GCCS. This plan is anticipated to be completed and provided to the GCCS Integrating Integrated Product Team (IIPT) in the summer of 2002 and submitted for GCCS Milestone Decision Authority (MDA) approval in 4th Quarter FY 02.

Revised and renumbered as Recommendation 3.c. Page 19

c. *"Survey the users during the application development process."* (Page 15)

C3I non-concurs. The recommendation is vague. It does not indicate the purpose of the survey. C3I supports user involvement at appropriate points in the development process. This process is ongoing with the current installation of a series of engineering drops at various locations (see response in paragraph 2.a. above). These installations allow users a hands-on evaluation thus contributing directly to the development effort. In addition to the upcoming functional user's test in June 2002, users are encouraged to submit evaluations at any time. Also the Joint Staff is planning an additional User Review Panel to evaluate the requirements that have not been incorporated into the RAS OT schedule. Additional requirements for future versions of the RAS OT will also be solicited.

Renumbered as Recommendation 3.d. Page 19

d. *"Support the Joint Staff in the development and application of concrete, measurable, and qualitative performance measurements that can be accurately tested on the Readiness Assessment System Output Tool."* (Page 15)

C3I concurs with comment. As the requirements authority the Joint Staff is responsible for ensuring that requirements are defined with measurable and testable Threshold and Objective values. OASD-C3I tasked the Joint Staff to develop a JROC-approved GCCS Operational Requirements Document (ORD) with validated Key Performance Parameters (KPPs) by Oct 02. This ORD will include RAS (OT) Threshold and Objective requirements.

Deleted

e. *"Support the Joint Staff in developing the RAS (OT) for performance standards that, at a minimum, provide a way of assessing performance, cost schedule, technical quality and reliability, and user satisfaction and*

formally report on how the Readiness Assessment System Output Tool is meeting those standards." (Page 15)

C3I non-concurs. The recommendation fails to recognize the distinction of the separate, yet complementary, roles of the Joint Staff, as Requirements Authority, and DISA, as GCCS Program Manager nor the formal processes already in place for program planning and reporting. The Joint Staff is responsible for developing GCCS requirements. It is the GCCS PM's responsibility to manage cost, schedule and performance, and report in accordance with DoD 5000.2-R. PA&E independently assesses the program costs through review of the program's economic analysis. The operational assessment (OA) or operational test (OT) will report on how the Readiness Assessment System Output Tool is meeting those standards.

Joint Staff Comments

THE JOINT STAFF
WASHINGTON, DC

Reply ZIP Code:
20318-0300

DJSM-0489-02
23 May 2002

MEMORANDUM FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

Subject: Proposed DOD Inspector General Report on Global Command and Control System Readiness Assessment System Output Tool (RAS-OT) (D2001LG-0101.01)

1. Thank you for the opportunity to review the draft proposed DOD IG report.[1] While portions of the report have merit, I cannot concur in many of its findings and recommendations.

2. The emphasis of the report is on management policy. I recognize the need to correct management deficiencies and the Joint Staff is working with DISA and the RAS-OT contractor to resolve them. However, I disagree with those recommendations that--if followed--would result in further delays to the RAS-OT development process. In addition, I believe that the report does not adequately recognize progress made in improving the RAS-OT program over the last 12 months. The enclosure provides detailed comments.

3. The Joint Staff point of contact is LTC Mike Baker, J3, 693-5475/8191.

John P. Abizaid

JOHN P. ABIZAID
Lieutenant General, USA
Director, Joint Staff

Enclosure

Reference:
1 DODIG memorandum, 20 March 2002, "Audit Report on the Global Command System Readiness Assessment System Output Tool (Project No. D2001LG-0101.01)

ENCLOSURE

Introduction

This document is the official Joint Staff response to DOD IG Project D2001LG-0101.01; Global Command and Control System Readiness Assessment System Output Tool. Direct quotes from the DOD IG report are presented in italics with page numbers from the draft audit. Other quotes are listed in italics as well with appropriate citations.

*(Page 1, paragraph 4) "**Joint Staff.** The Joint Staff, as the project sponsor for all GCCS applications, represents the needs of the users. Throughout the requirements validation and approval process, the Joint Staff identifies and prioritizes functional requirements that must be satisfied by GCCS."*

Objectives

(Page 3, paragraph 4, 4th line) ". . . The specific objective for this segment of the audit was to assess management and oversight of the Readiness Assessment System Output Tool."

The Joint Staff understands the objective of this audit. It is important to ensure the findings and recommendations in this report apply to specific requirements and expectations applicable to the Readiness Assessment System Output Tool (RAS-OT) as stated in the DOD IG objective.

Important historical facts: These facts will be important when addressing DOD IG findings found later in the discussion. According to the 1998 Business Plan, approved by the Secretary of Defense in 1999, RAS would have combined four independent projects in Phase II (the phase under review). Those projects were 1) Automated Joint Monthly Readiness Review (AJMRR); 2) Global Status of Resources and Training System Enhanced Output (GSORTS (E)(O)) now commonly referred to as RAS-OT; 3) Joint Exercise Management Program III

(JEMP III) and 4) Global Status of Resources and Training System Enhanced Input (GSORTS (E)(I)). This is acknowledged on page 2 of the DOD IG draft report.

Point One: The AJMRR was canceled. The JEMP III was removed from the Readiness Assessment System and placed under a training management program within J7. GSORTS (E)(O), now called RAS-OT, was never designed to carry the full load of the original RAS concept as outlined in the Business Plan. The DOD IG should not apply standards set for the holistic RAS concept to RAS-OT as a stand-alone application.

Point Two: There is nothing in the RAS Business Plan to indicate that any of those three components were designed to replace legacy systems resident in the combatant commanders or Services. It is theoretically possible, but unlikely, for RAS-OT to replace a Service tool. Service tools query their respective SORTS databases that are of greater breadth compared to GSORTS. That is to say that GSORTS data is a large, but not complete representation of Service SORTS data. Therefore, a tool designed to query GSORTS data will not necessarily cover the full range of a Service SORTS database.

Point Three: According to the RAS Business Plan, GSORTS(E)(I) was designed "to replace service unique input tools so that there is a single tool that can be centrally modified as new requirements are added." (RAS Business Plan; pg. III-2) Only two of four Services are interested in adopting the Input Tool. DISA is developing Input Tools for the Air Force and Marine Corps. The Army and Navy's custom input tools feed portions of their respective SORTS databases beyond the scope of the RAS Input Tool. The Joint Staff will not require the Army or Navy to adopt the RAS Input Tool.

Point Four. The description of the RAS Output Tool in the DOD IG draft report (page 3) is accurate and captures the true intent of the tool. (One

administrative correction: That paragraph incorrectly lists the acronym for Global Status of Resources and Training System as SORTS. The correct term is GSORTS. SORTS and GSORTS are not synonymous.)

The DOD IG audit limited itself to a historical review and failed to consider current and future development plans for RAS-OT. The current timeline and reengineering effort place RAS-OT on a secure development schedule that aggressively addresses previously discovered performance shortfalls and involves representatives from the readiness user community where appropriate.

DOD IG Findings:

Finding 1. *(Page 4, 1st paragraph, 1st line) "DISA and the Joint Staff have not provided sufficient assurance that the RAS Output Tool will satisfy user requirements."* The Joint Staff nonconcurs. The Joint Staff amassed a total of 734 requirements for RAS-OT from combatant commands and Services. The list is constantly validated and updated. These requirements are well documented and briefed as necessary to the Global Command and Control Readiness Working Group (GCC RWG) which is composed of action officers from OSD, the Joint Staff, and the Services; the Flag Officer/General Officer Executive Steering Committee (ESC); and annually to the GCC RWG User Review Panel which represents the worldwide readiness community including combatant commands and Defense agencies.

The current breakdown of RAS-OT requirements is as follows: 395 requirements will be incorporated into the first global release of RAS-OT, version 4.0. These 395 requirements were selected for inclusion into version 4.0 because they are requirements common to most users and are technologically feasible within the current GSORTS architecture. These requirements are maintained by the J-3 Readiness Division and will not be vetted with combatant commanders or Services again. To do so would

jeopardize the development schedule. This is within the responsibilities of The Joint Staff as acknowledged by the DOD IG. *(Page 1, paragraph 4, 1st line) "The Joint Staff... as the project sponsor for all GCCS applications, represents the needs of the users. Throughout the requirements validation and approval process, The Joint Staff identifies and prioritizes functional requirements that must be satisfied by GCCS."*

The last formal, comprehensive review of the total requirement database occurred in June 01 in support of the Functional Qualification Test. The results of the test were documented and briefed to the ESC in July 01. The results of the test and recommendations to the ESC were the vehicle to solidify requirements for RAS-OT version 4.0, and to recommend the current timeline. That timeline allows for a major reengineering effort to produce a quality product, which is designed to user specifications. The ESC approved the set of requirements that define RAS-OT version 4.0 and the new developmental time line.

Further, 290 of the 734 requirements are categorized as "future" requirements because they are Service unique or are not within the technical capability of RAS-OT version 4.0 or are not possible within the current GSORTS database architecture. These requirements will be vetted with combatant commands, combat support agencies, and Services during Phase III of the RAS Business Plan which is also Phase III of the revised RAS-OT schedule which was approved by the ESC in July 01. Additional new requirements will be considered for inclusion into the master list.

The remaining 49 of 734 requirements were removed from the master database because they were either duplicates of other valid requirements, impossible to measure, or beyond the technological capability of foreseeable versions of GSORTS or RAS-OT. Requirements removed from the master database are maintained in the overall RAS-OT historical archive.

Finding 2. *(Page 4, 1st paragraph, 2d line) ". . . DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. This condition*

occurred because DISA and the Joint Staff did not involve the users throughout the development process, implement adequate testing procedures, fully document critical decisions, and establish effective performance measurements to monitor development."

1. *"DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones."* The Joint Staff concurs. The fielding of RAS-OT has been delayed multiple times. See chart on page 10 of the IG report.

2. *"This occurred because DISA and The Joint Staff did not involve the user community throughout the development process."* The Joint Staff nonconcurs. Users have been, and will be, involved at every appropriate step in the developmental process. As described earlier, users from the readiness community did define the requirements. After that point, user involvement is limited until a production representative system is developed. Users do not participate in the developmental phase of the system acquisition process, nor do they conduct formal developmental testing. That is the sole responsibility of the Program Manager. Users participate heavily in operational testing and feedback on "production representative" systems. That feedback is invaluable to the developmental process and is insisted upon by The Joint Staff.

The Joint Staff and DISA will involve users in the Functional Users Test currently scheduled for June 02. Testing and development up until this point have been the sole responsibility of the GCCS Program Manager, DISA. The DOD IG criticized The Joint Staff and DISA for not including users in all phases of the developmental process even though their participation would have been inappropriate and counterproductive. Novices to systems development methodology would likely provide conflicting or confusing feedback that would be more likely to disrupt, not enhance the process. The Joint Staff and DISA will capitalize on user input at every appropriate opportunity.

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3. (Page 4, 1st paragraph, line 6) *"DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. This condition occurred because DISA and the Joint Staff did not...implement adequate testing procedures . . ."* The Joint Staff nonconcurs. RAS-OT was tested on numerous occasions. Scheduling delays were a direct result of system failures discovered during formal, planned testing events.

Deleted

The DOD IG statement from page 8, paragraph 4, 1st line states the issue in a different way. That statement reads, ***"Testing.*** *DISA and the Joint Staff failed to implement adequate testing procedures to address user concerns about the operational capabilities of the application. With the exception of U.S. Joint Forces Command, the Unified Commands and the Services had not participated in RAS Output Tool testing."* USJFCOM was invited to view the work in progress because DISA wanted feedback on the JRAMS functionality, which is being incorporated into RAS-OT. We received valuable feedback from USJFCOM and developed eight new requirements, which will be included in RAS-OT ver 4.0. Other USJFCOM comments from page 8 of the DOD IG audit mirror shortcomings that DISA and the Joint Staff had already identified as a result of the Functional Qualification Testing from June 01. These findings resulted in the ESC decision to reengineer the tool.

Revised

(Page 8, paragraph 4, 12th line) "adequate. Since the time of the preliminary requirements definition, DISA has provided limited hands-on testing experience, which has diminished the potential that the users will gain the confidence that the RAS Output Tool will satisfy their needs." USJFCOM's comments are typical of users who apply standards for mature systems, like their own JRAMS, against evolving systems such as RAS-OT. Involving users too early in the process usually, as it did in this case, erodes their confidence in the system. In practice, involving users too early has precisely the opposite effect recommended by the DOD IG. Users will participate in the Functional Users Test scheduled for June 02 and at other appropriate events later in the project.

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Modified

4. *(Page 4, 1st paragraph, 2d line) "DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. That condition occurred because DISA and the Joint Staff did not... fully document critical decision,. . . ."* The Joint Staff nonconcurs. To properly address this assertion the Joint Staff requests specific examples of critical decisions that were not documented and the reference for determining precisely how those decisions should have been documented. The chart on page 10 of the DOD IG draft identified the four primary critical decisions that authorized delays in the RAS-OT projected delivery dates. That chart is titled, "RAS Output Tool Fielding Delays."

Page 10

5. *(Page 4, 1st paragraph, 7th line) "DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. That condition occurred because...DISA and the Joint Staff did not...establish effective performance measurements to monitor development.* The DOD IG further states on page 9, 6th paragraph, of the draft, ***"Performance Measures.*** *DISA and the Joint Staff did not develop an adequate mechanism that would measure performance against standards.* The Joint Staff nonconcurs. DISA and the Joint Staff did establish effective performance measurements to monitor development and measure success, or failure, against a specific set of criteria. The Requirements Traceability Matrix (RTM), a component of the System Requirements Specifications (SRS), methodically compares specific system performance expectations to documented system requirements. Every single approved requirement slated for RAS-OT version 4.0 has a documented test procedure and an expected outcome.

From a GCCS perspective, the Joint Staff is constructing an Operational Requirements Document for GCCS that incorporates GSORTS and RAS-OT requirements including threshold and objective parameters. This is a Joint Staff action and not the responsibility of DISA.

Finding 3. *(Page 4, 2d paragraph) "In addition, delays in fielding made it necessary for the Unified Commands and Services to develop new applications or modify existing applications that would satisfy their unique requirements for performing readiness analysis."* The Joint Staff nonconcurs. This assertion draws an incorrect corollary between RAS-OT delays and development of combatant command or Service tools.

The three analytical systems outlined in the original concept for RAS Phase II: AJMRR, GSORTS(E)(O), and JEMP III, were never intended to replace combatant command or Service specific tools. The GSORTS(E)(I) was designed to replace Service input tools, but the input tool is not an application for performing analysis.

The first opportunity to cause combatant commands or Services to develop or modify their applications because of a RAS delay would have been with the first slip of the RAS development schedule, November 1999 (as per the chart on page 10 of the DOD IG draft report). However, combatant command and Service readiness applications predate November 1999. USJFCOM's JRAMS began development in 1995 and JRAMS Classic was fielded in 1997. The Army's readiness management system, ARMS, has been in use since 1989. The Navy's Type Commanders' Readiness Management System (TRMS) predates 1999, the Marine Corps' Global Online Marine Edit and Reporting System (GOMERS) predates 1999. HQ Air Force is developing a new tool to tackle the issue of "predictive readiness." This concept is beyond the scope of RAS-OT or any other GCCS application. It is therefore incorrect to blame delays in RAS-OT for the Air Force decision to create this capability. The J-3, Readiness Division, knows of no combatant command or Service who based a readiness development decision on RAS-OT schedule delays.

Finding 4. User Requirements

1. The DOD IG surveyed the four Services and six unified commands but found a lack of "community awareness." This is not surprising considering personnel turnover rates compared to the RAS developmental timeline. Simply

stated, most current combatant command and Service representatives were not in their current job at the time the RAS Business Plan was staffed or during the RAS-OT requirement development process.

The DOD IG draft report states, *(page 6, 3d paragraph, 3d line) "requirements. We surveyed each of the four Services and six of the nine Unified Commands to assess users awareness of and participation in the RAS Output Tool requirement identification and development. The U.S. European Command, the U.S. Pacific Command, the U.S. Special Operations Command, and the Air Force stated they had limited knowledge of the RAS Output Tool. In addition, the U.S. Central Command, the U.S. Southern Command, and the Navy all stated that they had no knowledge of the RAS Output Tool."*

In sequence: the US European Command has a functioning version of the RAS-OT in the readiness division of their headquarters. This installation was coordinated in the first quarter of FY 02 and completed in January 2002. USPACOM has been briefed on RAS-OT by the Joint Staff, and their J5 planners expressed interest in acquiring the tool. US Special Operations Command not only has extensive knowledge of RAS-OT, it is scheduled to receive a production representative version of the software in May 2002. USSOCOM has also agreed to participate in the next test, June 2002.

Air Force submitted a significant number of RAS-OT requirements, is a member of the Global Command and Control Readiness Working Group (GCC RWG), and has been working with DISA APC 19 to develop an Air Force version of the RAS Input Tool. The Air Force has production representative RAS-OT software loaded on at least three GCCS work stations and will participate in the next formal RAS-OT test. Like the Air Force, Navy is a member of the GCC RWG and has a working version of RAS-OT in their headquarters readiness office.

In addition to the above-mentioned commands, USTRANSCOM received a production representative version of RAS-OT and has agreed to participate in future testing. HQ Army, HQ USMC, and J-3, DDGO Readiness, all have the latest versions of RAS-OT working on GCCS workstations. The DOD IG, in

many cases, may have failed to interview the right people at several combatant commands and two Services.

2. *(Page 6, 3d paragraph, 11th line) ". . . the U.S. Joint Forces Command stated that the RAS Output Tool did not provide Joint Readiness Automated Management System (JRAMS) functionality and performed significantly slower than JRAMS."* The RAS Output Tool does contain value added JRAMS functionality, but not every aspect of JRAMS is included in RAS-OT. That is by design. It is important to understand that JRAMS and RAS-OT, initially, were both developed by the same contractor, SAIC. SAIC was replaced because they could not satisfy the full range of RAS-OT user requirements. In short, RAS-OT started out as a tool designed very much along the lines of JRAMS but could not grow to satisfy the RAS-OT user requirements.

USJFCOM is not the only RAS-OT customer. The DOD IG criticizes the fact that RAS-OT is not like JRAMS. The DOD IG implies that JRAMS could have been a better candidate than RAS-OT. At the same time, the DOD IG criticizes, the lack of user involvement in requirements generation for RAS-OT. JRAMS was not built to combatant command and Service specifications. JRAMS was built to USJFCOM specifications. JRAMS could not satisfy the global readiness communities' requirements in 1997 nor could the application's architecture be modified to adequately incorporate user requirements by 1999.

Initial acceptance of the ACTD product was not sufficiently tested to scope the project. JRAMS code was not compatible with the GCCS architecture (Defense Information Infrastructure Common Operating Environment (DII COE)). Secondly, the contractor, SAIC, failed to meet performance standards and was replaced by AB Floyd. This introduced significant delays and restarted the development process.

JRAMS is an effective application. There are features in JRAMS whose incorporation make RAS-OT a better product, but a direct comparison of the two applications is not appropriate in this case. RAS-OT is slower than JRAMS, in part, because it processes more information, serves a global

population of users, and satisfies a much larger collection of user-defined requirements. However, the fundamental lack of speed was a major factor in the recommendation to the ESC in July 01 to reengineer the tool. That decision has produced tremendous results. RAS-OT is now much faster and the quality of the entire application has improved dramatically from July 2001 to present. Recent testing by J-3 Readiness and DISA (February 02) indicates RAS-OT will now pass the speed requirements dictated in the formal requirements list.

Additionally, JRAMS was not built to comply with GCCS architecture. JRAMS architecture is not compatible with security and validation protocols for GCCS. As stated on page 1 of the DOD IG audit, *(Page 1, 1st paragraph, 5th line)"*. . . *GCCS consists of interoperable hardware, software, common procedures, standards, and interfaces that comprise an "operational architecture."* JRAMS was not designed to be GCCS compatible or DII COE compliant.

Finally, JRAMS is USJFCOM's application of choice because they built it to their specifications. USJFCOM receives funding annually from DISA to maintain JRAMS. Success of the RAS-OT may be perceived by USJFCOM as a potential threat to that annual funding stream (i.e., USJFCOM may not necessarily represent the JRAMS/RAS-OT issue from an unbiased position). Recommend that, in this case, the DOD IG consider the objectivity of the source for this issue.

Finding 5, RAS Business Plan comments (pg. 7). Issues involving validation of requirements have been discussed. One must be careful to draw 2002 conclusions from a 1998 business plan. It was vetted by working groups during its development. The Services all provided comments that were incorporated in the final product. In the end, each Service concurred.

1. SecDef Comments. The DOD IG cites a specific SecDef "substantive comment" to be included in the revision of the Business Plan. *(Page 7, 5th*

paragraph) "The key to the utility and effectiveness of the RAS is the involvement of the CINCs...and other users in the development process. Early involvement will improve understanding of the potential of RAS and will lead to the identification of new requirements." The DOD IG uses this quote out of context. The above stated paragraph is specifically directed to be added to Chapter IV at the bottom of page IV-2. This section addresses Phase III of the RAS Business Plan. "Integration of New Indicators, Defined." This chapter is dedicated to a phase of RAS development that has not yet begun. According to the Business Plan, "Phase III involves the future planned integration of selected portions of the Joint Total Asset Visibility (JTAV) system, Joint Personnel Asset Visibility (JPAV) system, and Defense Integrated Military Human Resources System (DIMHRS) leading indicators into RAS." This capability is too far down the road to conceptualize yet alone make deliberate plans. Some of the systems described in Phase III do not even exist today. The SecDef comment used by the DOD IG to substantiate their case for requirements development does not apply to the Phase of RAS-OT development addressed by this audit. The Joint Staff requests the SecDef quote be removed from this audit.

2. Army Comments. The DOD IG quote of the Army comment to the RAS Business plan is inaccurate. The DOD IG report quotes the Army comment as follows, *(Page 7, 6th paragraph, 2d line) ". . . However, Army officials did not believe that DISA and the Joint Staff had performed an adequate mission needs analysis or validated the requirement for a readiness assessment application as comprehensive as RAS."* The Army comment did not mention the GSORTS (RAS) Output Tool. The Army was commenting on the full RAS business plan. The comment was taken out of context and misrepresents Army intent. One has to only read the two paragraphs that follow to get the true Army purpose behind their comment. The Army was not worried that the tool would not meet their needs, they were worried that the RAS Business Plan

was too invasive, perhaps intruding on the Services' Title X responsibilities. The subsequent paragraphs from the Army statement read as such:

> *"The recurring concepts supporting RAS are "commanders at all levels" and "near real time" readiness information. Army believes a more thorough mission needs analysis is needed to determine more precisely the information timeliness needs at each level of command, and to target that information to the needs of the recipient. For instance, policy makers do not need minute details or 24 hour readiness updates to carry out policy-making responsibilities. Additionally, in the world of deliberate planning, current readiness data is not useful. Force sourcing decisions drive resourcing which ultimately determines readiness. Only in the sourcing of contingency operation force requirements is current readiness a factor....*
>
> *RAS seems to be driven more by the fact that the technology to achieve a directed telescope to the forward foxhole will soon be available than by any validated need. Army acknowledges that RAS consists of a grouping of systems and software which are already in some state of development or fielding, many of which are already funded and are intended to be resident in the GCCS/GCSS suites. However, Army believes that the true cost of a comprehensive RAS has not been determined. Finally, Army is concerned that the potential for micromanagement inherent in RAS represents an intentional or unintentional intrusion into the Services' title X responsibilities to provide ready forces to the combatant commanders."*

The DOD IG snapshots of RAS Business Plan comments from the Navy, Air Force, and Marine Corps are more accurate but still represent the RAS Business Plan in its entirety, not necessarily the GSORTS(E)(O) now known as RAS-OT. Remember, the objective of the DOD IG audit: *"The specific objective for this segment of the audit was to assess management and oversight of the Readiness Assessment System Output Tool." (Page 3, Objectives, 4th line)* The

Joint Staff requests the DOD IG recognize this in the audit or delete Service comments that do not specifically apply to RAS-OT.

Search for Candidate Solutions and Analysis of Alternatives. *(Page 9, 3d paragraph, 2d line) ". . .DISA could not document that they conducted an appropriate search for candidate applications for the RAS Output Tool."* (Page 9, paragraph 4) and *"Existing Service or Unified Command tools might have met RAS Output Tool requirements, but the Joint Staff and DISA could not document that they conducted an appropriate search for candidate applications for the RAS Output Tool . . . "* The Joint Staff concurs in comment. An extensive search of our records could not provide the requested documentation. The search for candidate solutions and analysis of alternatives was complete by the time DISA took over the project from DARPA. By the time the business plan was approved by the Secretary of Defense, the decisions were made and DISA proceeded to build upon the work begun by SAIC.

The 20 March 02 cover letter to the DOD IG Draft Audit directs the J-3 to "comment on the material control weakness discussed in Appendix A." *(page 17, last paragraph) "We identified material management control weaknesses within the Joint Staff and DISA as defined by DoD Instruction 5010.40. Specifically, management controls of the Joint Staff for GCCS oversight and requirements development did not exist."* The Management Control Program Review from the DOD IG Audit Appendix A refers to GCCS-level policies and procedures. Recommendations in this area specifically address improving GCCS management and development for new applications. Both GCCS Management Structure and the GCCS Operational Requirements Document are currently under revision and is a priority within the Director for Operations, J-3.

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Page 15 Revised and renumbered as Recommendation 2.a.

DOD IG Recommendations (pg. 14)

The DOD IG recommends the Director for Operations, Joint Staff:

1.a. *"Revalidate the original Global Command and Control System Readiness Assessment System Output Tool requirements with current users within the Unified Commands, Services, and Defense Agencies and ensure that future Global Command and Control System user requirements are implemented as validated."* The Joint Staff concurs in the intent of the recommendation but would modify the precise execution of the task. The total list of RAS-OT requirements numbers 734. The requirements supporting the current software version under construction number 395. Those requirements are locked-in and will not change. This is a developmental necessity. Software engineers cannot hit a moving target resulting from changing requirements. J-3, Readiness, and DISA will review the 395 requirements again in preparation for the June 02 test. Of note; as of 15 April 02, DISA has satisfied 370 of 395 requirements. RAS-OT 4.0 is very much on track. The Joint Staff sees no reason why personnel turnover among the combatant commands or Services justifies revalidating user requirements for the software version under development. To do so would cause a significant delay in the developmental process. Any review that would impede or delay the development process of RAS-OT version 4.0 is unacceptable to the Joint Staff.

The remaining 290 (plus) user requirements, and others that will be collected over the next year, are earmarked for RAS-OT versions beyond 4.0. All combatant commands, combat support agencies, and Services will be invited to review those requirements. This review will take place shortly after the June 02 RAS-OT test. This will allow DISA and the Joint Staff to publish the results of the test, publish the set of requirements supporting RAS-OT version 4.0, and ask the user community to review and comment on the remaining user requirements that could potentially go into future RAS-OT software builds.

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1.b. *"For future GCCS Readiness applications, search Government and commercial sources for applications that will satisfy requirements and document the results."* The Joint Staff nonconcurs. Current OSD initiatives to conceptualize and develop an improved readiness reporting system for DOD are fulfilling this requirement. OSD recently looked at current readiness applications DOD-wide to support their research effort. A similar effort by the J-3 would be redundant and a waste of valuable time and money. The DOD IG should be aware of the OSD effort and instead recommend OSD publish their findings to benefit the entire DOD readiness community. The Joint Staff will make sure future studies of GCCS candidate applications are thoroughly documented and archived for historical purposes.

Renumbered as Recommendation 2.b.

Added Recommendation 1.

1.c. *"Develop performance standards that, at a minimum, provide a way of assessing the performance, cost, schedule, technical quality and reliability, and user satisfaction and formally report on the progress of the Readiness Assessment System Output Tool in meeting those standards."* The Joint Staff concurs, but will not delay the RAS-OT developmental effort during this process.

Renumbered as Recommendation 2.c.

Joint staff comment on one DoD IG recommendation for DISA (Page 15)

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2.a. The DOD IG recommends DISA *(Page 15, paragraph 2.a.) "Pause development of the Readiness Assessment System Output Tool until the Joint Staff fully addresses requirements development, user satisfaction, program documentation, and performance measurement."* The Joint Staff recommends against this course of action. The rate of the developmental progress for RAS-OT has never been greater than it is right now. Working prototypes of the RAS-OT are resident in the J-3, Readiness Division office, HQ US Army, HQ US Air Force, HQ USMC, HQ Navy, USEUCOM, USTRANSCOM, and USJFCOM, and will soon be installed at the USSOCOM. Initial response to the prototype is very favorable. The first test of a production representative system that will

Revised and renumbered as Recommendation 3.a.

employ users from the readiness community including some combatant commands, all Services, and at least one combat support agency is scheduled for June 02. A "pause" would further exacerbate the same condition that has brought the most negative scrutiny, more scheduling delays. Previous delays were caused by failures of the software to meet user requirements. A delay for the sake of staff analysis would be inappropriate. The recommendations described by the DOD IG can be accomplished as a parallel effort.

Defense Information Systems Agency Comments

DEFENSE INFORMATION SYSTEMS AGENCY
701 S. COURTHOUSE ROAD
ARLINGTON, VIRGINIA 22204-2199

IN REPLY
REFER TO: INSPECTOR GENERAL (IG)

3 May 2002

MEMORANDUM FOR DOD Inspector General

SUBJECT: Audit Report on Global Command Control System Readiness Assessment System Output Tool (Project No. D2000LG-0101.01)

1. The enclosed document provides a response from the Defense Information Systems Agency on the subject DOD IG Draft Report.

2. If you have any questions, please call Teddie Lou Steiner, Audit Liaison, at (703) 607-6316 or Liz Lippmann, Audit Liaison, at (703) 607-6306.

FOR THE DIRECTOR:

Enclosure a/s

RICHARD T. RACE
Inspector General

Quality Information for a Strong Defense

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DEFENSE INFORMATION SYSTEMS AGENCY (DISA) RESPONSE TO DoDIG DRAFT AUDIT REPORT "GLOBAL COMMAND AND CONTROL SYSTEM READINESS ASSESSMENT SYSTEM OUTPUT TOOL"

Project No. D20001LG-0101.01 of 20 March 2002

Introduction

- In addition to providing DISA concurrence/ nonconcurrence/ comments to the DoDIG's recommendations for DISA, DISA is also providing informational comments on the Recommendations for the Director for Operations, Joint Staff, where the recommendation and appropriate action include DISA efforts.
- Comments regarding the discussion portion of the draft report are attached as background information.
- Throughout, direct quotes from the DOD IG report are presented in italics with page numbers from the draft audit. Other quotes are listed in italics as well with appropriate citations.

DOD IG Recommendations

Revised and renumbered as Recommendation 2.a.

1. Recommendations for the Director for Operations, Joint Staff:

   a. *"Revalidate the original GCCS RAS OT requirements with current users within the Unified Commands, Services, and Defense Agencies and ensure that future GCCS user requirements are validated and implemented in accordance with current guidance."*

Requirements were recently reviewed at the direction of JS J3 DDGO-R and will be reviewed again as part of ongoing development. The full set of user requirements were revalidated in May 2001, by the JS J3 DDGO-R in preparation for the Functional Qualification Testing in June 2001. The results were briefed to the RAS ESC in July 2001. The Joint Staff and DISA will review the full user requirements list again in May 2002 in preparation for RAS OT Functional User Testing scheduled for June 2002. Joint Staff has indicated they will review user requirements slated for RAS OT versions beyond 4.0 as well as any additional requirements collected. Joint Staff has indicated this effort will include all Combatant Command, Combat Support Agency, and Service readiness divisions. To ensure

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clarity, delete the phrase "GCCS user requirements" and replace with "RAS OT user requirements."

b. *"For future GCCS Readiness applications, search Government and commercial sources for applications that will satisfy requirements and document the results of those searches."*

Renumbered as Recommendation 2.b.

Current OSD initiatives to conceptualize and develop an improved readiness reporting system for DOD are fulfilling this requirement. The Joint Staff and DISA are involved in this effort. The Joint Staff is also involved in a similar process as part of the GCCS ORD development. Additional efforts in this direction would be redundant.

c. *"Develop performance standards that, at a minimum, provide a way of assessing the performance, cost, schedule, technical quality and reliability, and user satisfaction and formally report on the progress of the RAS (OT) in meeting those standards."*

Renumbered as Recommendation 2.c.

It is the responsibility of the Joint Staff, as the Requirements Authority, to identify, validate, and prioritize GCCS requirements, as well as provide objective and threshold functional performance parameters to DISA. It is DISA's responsibility, as the GCCS Program Manager, to build a plan for the development, integration, testing, accreditation, and fielding of RAS OT as part of the larger GCCS program. It is the responsibility of the Joint Staff to represent the user community in the assessment of how well the developed functionality meets the validated operational requirements (based upon established threshold performance parameters) and user satisfaction with developed functionality. However, it is the Program Manager's responsibility to assess cost, schedule and performance and report in accordance with DoD 5000.2-R at the program level via quarterly Defense Acquisition Executive Summaries to the acquisition oversight authority. In this case, DISA provides the Program Manager (GCCS) and ASD (C3I) is the Milestone Decision Authority.

2. Recommendations for the Director, DISA:

a. *"Pause development of the RAS (OT) until the Joint Staff fully addresses requirements development, user satisfaction, program documentation, and performance measurement."*

Revised and renumbered as Recommendation 3.a.

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DISA nonconcurs. This was already essentially performed during the spring and early summer of 2001 under the auspices of the RAS ESC. Based upon a full review and validation of requirements, a thorough Functional Qualification Test, and feedback from the user community, the RAS ESC directed DISA in July 2001 to reengineer the RAS OT. Beginning with the installation in October 2001, pre-release, functioning versions of the RAS OT are resident at JS J3 DDGO-R, JFCOM, EUCOM, TRANSCOM, HQ US Navy, HQ US Air Force, HQ US Army, HQ USMC, MARFORLANT and MARFORRES. The first test of an operationally representative system involving users from Combatant Commands and Services is scheduled for June 2002. At this point another development pause would further exacerbate the same condition that has brought the most negative scrutiny, more scheduling delays. Previous delays were caused by failures of the software to meet user requirements. A delay for the sake of staff analysis would be inappropriate, costly, and counterproductive to delivering capability to the user community.

Renumbered as Recommendation 3.b.

b. *"Develop and document cost and feasibility analyses of solutions that are identified by the Joint Staff."*

DISA concurs. DISA has a documented process in the GCCS Evolutionary Acquisition Strategy for development of cost and feasibility analyses of candidate solutions. The GCCS Block IV Implementation Plan (formally known as the Phase IV Evolutionary Phase Implementation Plan) will include the capabilities that successfully pass this analysis and show how they are to be integrated into GCCS. This plan is anticipated to be completed and provided to the GCCS Integrating Integrated Product Team in the summer of 2002 and submitted for GCCS Milestone Decision Authority (MDA) approval in 4th Quarter FY 02.

Revised and renumbered as Recommendation 3.c.

c. *"Survey the users during the application development process."*

DISA concurs. This process is ongoing with the current installation of a series of engineering drops at various locations (see response in section 3.a.). These installations allow users a hands-on evaluation thus contributing directly to the development effort. In addition to the upcoming functional user's test in June 2002, users are encouraged to submit evaluations at any time. Also the Joint Staff is planning an additional User Review Panel to evaluate the requirements that have not been incorporated into the RAS OT schedule. Additional requirements for future versions of the RAS OT will also be solicited.

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d. *"Support the Joint Staff in the development and application of concrete, measurable, and qualitative performance measurements that can be accurately tested on the RAS (OT)."*

Renumbered as Recommendation 3.d.

DISA concurs with comment. The Joint Staff was tasked by ASD(C3I) to develop a GCCS Operational Requirements Document (ORD), which will contain objective and threshold performance parameters that are measurable and testable. It is important to note that 1) the responsibility for initiating requirements rests with the user, not the program manager, and 2) DISA is supporting the GCCS ORD development by participation in the JS-established and led working group. Thus, DISA has already completed action on this item by participating in the GCCS ORD development effort.

e. *"Support the Joint Staff in developing the RAS (OT) for performance standards that, at a minimum, provide a way of assessing performance, cost schedule, technical quality and reliability, and user satisfaction and formally report on how the RAS (OT) is meeting those standards."*

Deleted

DISA nonconcurs with this recommendation as written as it doesn't recognize the distinction of the two separate, yet complementary, roles of the Joint Staff, as Requirements Authority, and DISA, as GCCS Program Manager, nor the formal processes already in place for program planning and reporting. The Joint Staff, in identifying, validating, and prioritizing GCCS requirements, is responsible for providing objective and threshold functional performance parameters to DISA. It is DISA's responsibility to build a plan for the entire GCCS, not just RAS OT, that trades-off functional performance, schedule, and cost considerations for the GCCS system as a whole. Reliability is not one of these three primary categories of program assessment. It would, if addressed, be an operational requirement for functional performance. This recommendation will be met with the submission of the GCCS Block IV Implementation Plan to the GCCS Milestone Decision Authority in 4th Quarter FY 02.

A process for GCCS user satisfaction assessment is already in place - the JS J3 sponsors periodic web-based surveys and is supported by DISA in the development and execution of the survey.

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Formal reporting for GCCS performance/schedule/cost management is done in accordance with DoD 5000.2-R, at the Program level via quarterly Defense Acquisition Executive Summaries. The formal reporting structure does not require the breakdown of performance/schedule/cost information for the multitude of applications that comprise the GCCS.

Renumbered as Recommendation 3.e.

f. "Maintain comprehensive records of milestones, goals, and key decisions that document RAS (OT) progress."

DISA concurs. The GCCS Block IV Implementation Plan will document how RAS OT will be integrated into GCCS during Block IV.

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Management Control Program Review (page 17).

"We identified material management control weaknesses within the Joint Staff and DISA as defined by DoD Instruction 5010.40. Specifically, management controls of the Joint Staff for GCCS oversight and requirements development did not exist. Recommendations 1.a., 1.b., and 1.c., if implemented, will improve GCCS management and development for new applications in GCCS. Also, management controls in DISA for GCCS were not adequate to ensure that GCCS functionality such as the RAS Output Tool is developed, fielded, and documented with requirements that the users determine. Recommendations 2.a., 2.b., 2.c., 2.d., and 2.f., if implemented, will improve GCCS management and development of new applications in GCCS."

"DISA addressed Management Controls as an assessable unit and performed tests of controls on areas applicable to our audit objectives. DISA officials did not perform adequate tests of controls to insure that applications such as RAS have effective program management to include having appropriately developed user requirements and adequate baseline tracking of program status."

DISA concurs with comment. DISA is the recipient of identified, validated, and prioritized user requirements. It is not DISA's role to determine if user requirements are "appropriately developed." The program planning, monitoring, and reporting measures discussed in response to the recommendations for DISA, above, will address the management control concern raised in the draft report.

5

BACKGROUND COMMENTS

1. Objectives (page 3).

"The specific objective for this segment of the audit was to assess management and oversight of the Readiness Assessment System Output Tool."

DISA concurs with the stated objective, but nonconcurs with the draft report's descriptions of the scope and purpose of the Readiness Assessment System Output Tool. It is crucial to make the distinction between: 1) the original concept for the Readiness Assessment System (RAS) as a total system, 2) the RAS Output Tool (RAS OT), and 3) the collection of Readiness applications managed by DISA within the Global Command and Control Program Management Office. Per the stated objective, the findings and recommendations in this report should apply to the RAS OT, and not to the original concept for RAS, as delineated in the RAS Business Plan dated 1998.

According to the Business Plan, RAS would have combined four independent projects in Phase II. Those projects were 1) Automated Joint Monthly Readiness Review (AJMRR); 2) Global Status of Resources and Training System Enhanced Output (GSORTS (E)(O)), now commonly referred to as RAS OT; 3) Joint Exercise Management Program III (JEMP III); and 4) Global Status of Resources and Training System Enhanced Input (GSORTS (E)(I)).

Point One: The Joint Staff cancelled the AJMRR and JEMP III projects. GSORTS (E)(O), now called RAS OT, was never designed to carry the full load of the original RAS concept as outlined in the Business Plan. It would be incorrect to apply standards set for the holistic RAS concept to RAS OT as a stand-alone application.

Point Two: The RAS Business Plan does not indicate that either of its two remaining components were designed to replace legacy systems resident at Combatant Commands or Services. It is theoretically possible, but unlikely, for RAS OT to replace a Service tool. Service tools query their respective SORTS databases that are of greater breadth than GSORTS. Although the GSORTS database is large, it is not a complete representation of Service SORTS databases. Therefore, a tool designed to query GSORTS data will not necessarily cover the full range of a Service SORTS database.

Point Three: According to the RAS Business Plan, GSORTS(E)(I) was designed "to replace service unique input tools so that there is a single tool that can be centrally modified as new requirements are added." (RAS Business Plan; pg. III-2). Only two of four Services intend to adopt the Input Tool. DISA is developing Input Tools for the Air Force and Marine Corps. The Army and Navy's custom input tools provide Service-specific data. This data is required only for Title 10 responsibilities and is beyond the scope of the Joint SORTS database and, therefore, RAS Input Tool. It is not within DISA's purview to require the Army or Navy to adopt the RAS Input Tool.

Point Four: The description of RAS OT from the DOD IG draft report (page 3) is accurate and captures the true intent of the tool. However, that paragraph incorrectly lists the acronym for Global Status of Resources and Training System as SORTS. The correct term is GSORTS. SORTS and GSORTS are not one in the same. The DOD IG description of RAS OT does not state that RAS OT will replace a Service tool. The RAS Business Plan does not say that GSORTS(E)(O), (i.e., RAS OT), will replace Service tools. RAS OT is designed to replace the antiquated GCCS application known as GIQS (Generalized Interactive Query System). RAS OT also brings additional functionality to the Combatant Commands and Services that does not currently exist in the Readiness Community.

2. Readiness Assessment System Output Tool Development and Fielding (page 4).

a. " *DISA and the Joint Staff have not provided sufficient assurance that the RAS Output Tool will satisfy user requirements.*"

DISA nonconcurs. DISA is currently developing RAS OT based on a total of 734 requirements derived from Combatant Commands and Services. This list is validated and updated by JS J3 DDGO-R, as the readiness requirements authority, based on input from the readiness community. These requirements are contained in a Requirements Traceability Matrix (RTM) of the Systems Requirements Specification (SRS). They are well documented and briefed as necessary to the Global Command and Control Readiness Working Group (GCC RWG), the Readiness Assessment System Executive Steering Committee (RAS ESC), and annually to the GCC RWG User Review Panel. Current breakdown of those requirements is as follows. The first global release of RAS OT (i.e. v4.0) will include 395 of the 734 total requirements for the tool.

These requirements were nominated for inclusion into v4.0 because they are common to users at all levels and are technologically feasible given the current GCCS architecture and Readiness reporting structure. These requirements are based on a series of Joint Application Development sessions held between mid-1997 and 1999 with Combatant Command and Service representatives and approved by the JS J3 DDGO-R. Each requirement is represented by a test case. Requirement definition is within the responsibilities of the Joint Staff as acknowledged by the DOD IG on page 1 of the draft report, "*The Joint Staff… as the project sponsor for all GCCS applications, represents the needs of the users. Throughout the requirements validation and approval process, the Joint Staff identifies and prioritizes functional requirements that must be satisfied by GCCS.*"

The last formal, comprehensive review of the RTM occurred in June 2001 in support of the RAS OT Functional Qualification Test. The results of the review were documented and briefed to the RAS ESC in July 2001. The results of the test and recommendations to the RAS ESC provided a stable list of requirements for RAS OT v4.0. The current timeline was derived from the engineering effort required to provide the capability defined in these requirements. The timeline also incorporates a major reengineering effort to produce a robust, responsive tool designed around user specified requirements.

During the requirements validation, 290 of the 734 requirements were moved to the category of future requirements (i.e. beyond RAS OT v4.0) because they are either Service unique or not within the technical capability of RAS OT v4.0. JS J3 DDGO-R has indicated they will vet the requirements with Combatant Commands and Services during Phase III as defined in the RAS Business Plan. The RAS Business Plan also coincides with Phase III of the revised RAS OT schedule as approved by the RAS ESC in July 2001.

The remaining 49 of 734 requirements were designated as deleted in the RTM because they were either duplicates of other valid requirements, impossible to measure, or beyond the technological capability of foreseeable versions of GSORTS or RAS OT. Requirements deleted from consideration are still maintained in the RTM for traceability.

b. "*DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. This condition occurred because DISA and the Joint Staff did not involve the*

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users throughout the development process, implement adequate testing procedures, fully document critical decisions, and establish effective performance measurements to monitor development."

(1) *"DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones."*

DISA concurs. The fielding of RAS OT has been delayed several times as indicated on page 10 of the IG's report.

(2) *"This occurred because DISA and the Joint Staff did not involve the user community throughout the development process."*

DISA nonconcurs. As described earlier, users define the requirements. However, the users have not been involved in early phases of the developmental process because it is not appropriate. This includes the developmental phase of the system acquisition process. Users are essential in the latter stages of developmental testing and are the backbone of operational testing as user feedback provided on systems prior to fielding decisions is invaluable to the developmental process. The JS J-3 DDGO-R has mandated such user involvement. The first Functional Users Test of RAS OT v4.0 is currently scheduled for June 2002.

Deleted

(3) *"DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. This condition occurred because DISA and the Joint Staff did not…implement adequate testing procedures…"*

DISA nonconcurs. The delays were a direct result of system failures identified by formal, planned tests. Specifically, these were the Functional Qualification Tests conducted in Mar 2001 and again in June 2001.

Revised

(4) *"DISA and the Joint Staff failed to meet RAS Output Tool development and fielding milestones. This occurred because DISA and the Joint Staff did not… fully document critical decisions…"*

DISA nonconcurs. Considerable documentation related to critical decisions was presented to the DOD IG team and is portrayed in the "RAS Output Tool Fielding Delays" table on page 10 of the draft audit report.

3. User Requirements (page 6).

a. *"We surveyed each of the four Services and six of the nine Unified Commands to assess user awareness and participation in the RAS Output Tool requirement identification and development. The U.S. European Command, the U.S. Pacific Command, the U.S. Special Operations Command, and the Air Force stated they had limited knowledge of the RAS Output Tool. In addition, the U.S. Central Command, the U.S. Southern Command, and the Navy all stated that they had no knowledge of the RAS Output Tool."*

DISA concurs. At the time of the DOD IG survey, Combatant Commands had had limited, if any, exposure to the development efforts of RAS OT. In September 2001, based upon a favorable lab assessment of RAS OT and as a result of operational need arising from the Global War on Terrorism, JS J3 DDGO-R requested installation of an early release (i.e. engineering drop) of RAS OT. DISA, with Joint Staff concurrence, has continued with the phased installations of a pre-release, functioning version of RAS OT in the readiness organizations of Combatant Commands and Services. The RAS OT has been delivered to the following commands:

JS J3 DDGO-R
USEUCOM
HQ USMC
  MARFORLANT
  MARFORRES
HQ USAF
HQ USN
HQ USA
USJFCOM
USTRANSCOM

Installation is projected at USSOCOM, HQ ACC, USAFE, and AFSOC in the next few months.

USJFCOM *"stated that the RAS Output Tool did not provide JRAMS functionality and that the application performed significantly slower than JRAMS."*

DISA concurs with comment. The RAS OT does contain value-added JRAMS functionality. However, since RAS OT is designed to meet common Combatant Command and Service specifications, vice one specific command, not every aspect of JRAMS is included in RAS OT. In addition, JRAMS did not satisfy the Readiness

community's requirements in 1997 nor was it compliant with the GCCS architecture or compatible with GCCS security and validation protocols.

RAS OT is slower than JRAMS because it operates on a networked database vice a stand alone one, processes more information, and addresses a much larger collection of user defined requirements. Having stated that, the Joint Staff was not satisfied with the speed of the RAS OT either. The fundamental lack of speed was a major driving force behind DISA's recommendation to the RAS ESC in July 2001 to reengineer the tool.

b. RAS Business Plan Comments

DISA nonconcurs with the findings based on SecDef and Army comments as detailed below. The Business Plan was vetted by working groups during its development and all Services provided comments that were incorporated in the final product. In the end, each Service concurred.

(1) SecDef Comments. The DOD IG cites a specific SecDef "substantive comment" to be included in the revision of the Business Plan. *"The key to the utility and effectiveness of the RAS is the involvement of the CINCs…and other users in the development process. Early involvement will improve understanding of the potential of RAS and will lead to the identification of new requirements."* The DOD IG uses this quote out of context. The above quote was specifically directed to be added to Chapter IV at the bottom of page IV-2 of the RAS Business Plan. This section addresses Phase III, "Integration of New Indicators, Defined." This chapter is dedicated to a phase of RAS development that has not yet begun. According to the Business Plan, "Phase III involves the future planned integration of selected portions of the Joint Total Asset Visibility (JTAV) system, Joint Personnel Asset Visibility (JPAV) system, and Defense Integrated Military Human Resources System (DIMHRS) leading indicators into RAS." This capability is too far down the road to conceptualize yet, let alone make deliberate plans. The SecDef comment used by the DOD IG to substantiate their case for requirements development does not apply to the phase of RAS OT development currently in execution and addressed by this audit.

(2) Army Comments. The DOD IG quote of the Army comment to the RAS Business plan is inaccurately represented. The DOD IG report quotes the Army comment as follows, *"However, Army officials did not believe that DISA and the Joint Staff had*

performed an adequate mission needs analysis or validated the requirement for a readiness assessment application as comprehensive as RAS." The Army comment did not mention GSORTS(E)(O) (now called RAS OT), but was instead a comment directed at the full RAS Business Plan. The true intent of the Army's comment can be determined by examination of the two paragraphs following the one quoted in the Draft report. The Army had no worry about the tool meeting their needs. They were worried that the RAS Business Plan was too invasive, perhaps intruding on the Services' Title 10 responsibilities. The subsequent paragraphs from the Army statement read as such:

"The recurring concepts supporting RAS are "commanders at all levels" and "near real time" readiness information. Army believes a more thorough mission needs analysis is needed to determine more precisely the information timeliness needs at each level of command, and to target that information to the needs of the recipient. For instance, policy makers do not need minute details or 24-hour readiness updates to carry out policy-making responsibilities. Additionally, in the world of deliberate planning, current readiness data is not useful. Force sourcing decisions drive resourcing, which ultimately determines readiness. Only in the sourcing of contingency operation force requirements is current readiness a factor....

RAS seems to be driven more by the fact that the technology to achieve a directed telescope to the forward foxhole will soon be available than by any validated need. Army acknowledges that RAS consists of a grouping of systems and software, which are already in some state of development or fielding, many of which are already funded and are intended to be resident in the GCCS/GCSS suites. However, Army believes that the true cost of a comprehensive RAS has not been determined. Finally, Army is concerned that the potential for micromanagement inherent in RAS represents an intentional or unintentional intrusion into the Services' title X responsibilities to provide ready forces to the combatant commanders."

The DOD IG snapshots of RAS Business Plan comments from the Navy, Air Force, and Marine Corps are more accurate but still represent the RAS Business Plan in its entirety, not necessarily the GSORTS(E)(O), now known as RAS OT.

4. Testing (Page 8).

Final Report Reference

Revised

a. *"DISA and the Joint Staff failed to implement adequate testing procedures to address user concerns about the operational capabilities of the application. With the exception of the U.S. Joint Forces Command, the Unified Commands and the Services had not participated in RAS Output Tool testing."*

DISA nonconcurs. As stated in comment 2.b. (2) above, it is inappropriate for users to participate too early in the developmental testing process. If users are involved too early in the testing process, confidence in the final system can be irretrievably damaged. Users not eminently familiar with systems development methodology would provide conflicting or confusing feedback. Such input causes the development team to resolve the conflict, and then seek to address things that normally would be addressed in the course of developmental testing anyway. This would not enhance the process. However, once the product reaches the latter stages of developmental testing and clearly the operational testing phase, user input is essential. The JS J3 DDGO-R mandate insures that functional user testing and operational testing will rely heavily upon representatives from the user community. A Functional User Test is scheduled for June 2002.

Regarding USJFCOM's statements: USJFCOM was invited to view the work in progress because DISA wanted feedback on the JRAMS functionality being incorporated into RAS OT. This was a demonstration, not a test. DISA received valuable feedback from USJFCOM and JS J3 DDGO-R validated eight new requirements to be included in RAS OT v4.0.

b. *"Since the time of the preliminary requirements definition, DISA has provided limited hands-on testing experience, which has diminished the potential that the users will gain the confidence that the RAS Output Tool will satisfy their needs."*

DISA nonconcurs. As noted above, including users during early stages of development is not a productive use of either developer or user resources. The USJFCOM comments reflect the application of standards for mature systems, like JRAMS, against systems in development such as RAS OT. The involvement of users too early in the process usually results in a loss of confidence in the system and its developers. Through the engineering release of the RAS OT as described in 3.a. above, numerous users have had the opportunity to provide both formal and informal feedback for further refinement of functionality against validated requirements based on hands-on experience. In

addition, this has also allowed theses users to integrate the tool in support of real world current operations. The Functional User Test scheduled for June 2002 will certainly involve the user community. Inclusion of users will also occur during the operational testing phase in the project's schedule.

c. *"The Joint Staff and DISA did not maintain adequate documentation of critical decisions made during RAS Output Tool development."*

DISA nonconcurs. Critical decisions have been documented. The following documents are cited as examples:

- In Progress Review (IPR) briefing slides (24 Nov 1999). DISA presented a tactical way ahead for RAS, assessed the risk associated with this course of action, and addressed the Joint Staff concerns.
- RAS IPR meeting minutes (6 Apr 2000). The minutes addressed the issues of RAS OT shortcomings and DISA D6 response to those issues.
- RAS IPR meeting minutes (22 Nov 2000). The minutes document the concerns of the Joint Staff and due-outs resulting from those concerns. One of the items led to the formation of the RAS ESC and its supporting RAS Action Officer's Working Group (RAS AWG).
- RAS ESC briefing slides (23 Feb 2001). This RAS ESC addressed the 10-month slip briefed at the 22 Nov 2000 IPR and the decision to perform a JRAMS-E versus a RAS OT assessment.
- RAS ESC meeting minutes (20 Apr 2001). RAS ESC addressed the current schedule, short falls identified by the Functional Qualification Test (21 Mar 2001), and a course of action (COA) designed to mitigate those issues.
- RAS ESC meeting minutes (25 Jul 2001). RAS ESC addressed the progress made as of the Functional Qualification Test (22 Jun 2001). RAS ESC prescribed the way ahead to address the remaining deficiencies, acknowledged DISA's proposed schedule of events, and assessed the risk's associated with this COA.

There is also a volume of correspondence related to the RAS OT (then called GSORTS (E) (O)) statement of work. The period of correspondence is from January 1998 to July 2000. This provides considerable detail into the genesis of issues leading to RAS OT shortcomings and missed milestones. There is a similar volume,

although much smaller, for the current contract covering RAS applications in general, including RAS OT.

It would be helpful if the DOD IG would identify which critical decisions DISA did not document, and applicable references delineating how such decisions should have been documented.

d. *"In addition, an adequate mechanism for measuring performance was not established."*

DISA concurs with comment. In a November 2000 GCCS Program Management Review, OASD (C3I) recognized the need for a GCCS Operational Requirements Document (ORD) and tasked the Joint Staff to develop an GCCS ORD and submit it to the JROC for approval in FY02. The GCCS ORD will identify objective and thresholds for operational requirements, as well as key performance parameters, for the GCCS system which will include RAS OT as a mission application of GCCS.

e. *"In addition, delays in fielding made it necessary for the Unified Commands and Services to develop new applications or modify existing applications that would satisfy their unique requirements for performing readiness analysis."*

DISA nonconcurs. This assertion draws an incorrect corollary between RAS OT delays and development of Combatant Command or Service tools. The systems within RAS designed to perform readiness analysis, AJMRR and GSORTS(E)(O), were never intended to replace Combatant Command or Service specific tools. The GSORTS(E)(I) was designed to replace selected Service input tools, but the input tool is not an application for performing readiness analysis.

In addition, Combatant Command and Service readiness applications predate the first slip in the RAS development schedule identified to the RAS ESC in November 1999. USJFCOM's JRAMS began development in 1995 and JRAMS Classic was fielded in 1997. The Army system, ARMS, has been in use since 1989. The Navy's TRMS predates 1999 as does the Marine Corps' GOMERS. DISA is not aware of any Combatant Command or Service that has based a readiness development decision on RAS OT schedule delays.

5. RAS Output Tool Costs.

Final Report Reference

"DISA has spent $1.3 million directly allocatable to the RAS Output Tool. DISA has also spent an unknown portion of an additional $9.2 million, classified as readiness applications support, for the RAS Output Tool."

Footnote Page 4

DISA concurs with comment. RAS OT expenditures total approximately $6.1 million between 01 January 1998 and 31 March 2002. Approximately $1.72 million of this total resulted from 1998 development efforts by SAIC. Initial effort was under the Defense Advanced Research Project Agency's (DARPA) management. DISA took over the project in April 1998 using that developer. Subsequently, DISA merged the RAS effort with ongoing projects. The new contract effort initiated in January 1999 with AB Floyd, Inc. Approximately $4.3 million has been expended on RAS OT development between 11 January 1999 and 31 March 2002.

6. DOD IG Conclusion. (page 14)

" The DoD has spent more than 5 years and millions of dollars attempting to develop and field a readiness analysis application that will not be available for at least another 18 months. The Joint Staff did not adequately document the need for the RAS Output Tool. Also, DISA does not appear to have thoroughly investigated the costs and feasibility of fielding the RAS Output Tool and does not appear to be testing operational performance requirements that agree with user requirements. Consequently, the program has encountered numerous fielding delays and DISA has started a redesign effort to make the application operational. Furthermore, the RAS Output Tool may not satisfy readiness analysis requirements for the user. In addition, DoD did not establish performance measures that would facilitate effective program management and oversight and help ensure that DISA fields a readiness analysis application."

DISA concurs with comment. DISA has taken a number of steps over the last 18 months to achieve stable development, integration, testing, and fielding plans for RAS OT. Those steps are described in the responses to findings in this report, as shown above. The DOD IG Audit Report does not recognize the significant progress that has been made over the last 18 months. Unfortunately, the report focuses on the issues from the previous three years. An early release of RAS OT is now installed at a number of Combatant Command and Service locations and the users at those sites are extremely positive in their assessment of the operational usefulness of the tool. As DISA completes the GCCS Block IV Implementation Plan, cost,

feasibility, operational performance requirements, and performance measures will be addressed for major Block IV capabilities, including RAS OT.

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